CEMET

Canadian Energy Management and Environmental Training Program

ENERGY MANAGEMENT TRAINING

Resource Catalogue

Cat #: M92-106/1995E
ISBN: 0-662-23931-8

Printed in Canada on recycled paper.

101-01710/

Preface

This is a comprehensive resource catalogue of available training materials and courses brought together from a wide spectrum of organizations across Canada and elsewhere. Contributors include BOMI, Honeywell Inc., electrical and gas utilities, ASHRAE, Energy Training Ontario, Tescor, Association of Energy Engineers, and many more operating in the field of energy management training.

The purpose of this catalogue is to provide easy access to a "one-stop" shop of energy management training information. The target audiences are clients of Natural Resources Canada's (NRCan's) energy-efficiency initiatives. Other energy users may also find the information useful.

For easy reference, the material is organized as follows:

subject	Category of material/course
organization	Source or material/course
address	Address of organization
course duration	
course description	Brief overview of material/course content
target sectors	Applicable sector of the material/course
specific area	
audience	Who should take the course/utilize the material

This catalogue is one in a series of training products being developed and forms part of NRCan's Canadian Energy Management and Environmental Training Program (CEMET). These products include energy management workshops, training case studies, model needs analysis documents, and other energy-efficiency related training materials.

For information about NRCan's CEMET program or NRCan's energy-efficiency initiatives, please contact:

Energy Efficiency Branch
Natural Resources Canada
580 Booth Street
18th floor
Ottawa, Ontario
K1A 0E4
(fax) 613-947-4121

Table of Contents

Alternative Energy 2

Boilers 3

Building Envelope 8

Cogeneration, Thermal Storage 33

Combustion Control 35

Control Systems 36

Electric Motors 43

Electrical 45

Energy Accounting, Financial Analysis 46

Energy Auditing 48

Energy (General) 55

Fans, Pumps 75

Furnaces, Dryers, Kilns 77

Heating, Ventilation, Air Conditioning 78

Lighting Systems 93

Mechanical Systems 105

Planning & Managing 106

Steam & Condensate Systems 113

Technical Information 115

Thermodynamics (Energy Basics) 116

Valves 118

Waste Heat Recovery 119

Water 120

Index 121

Alternative Energy

UNIVERSITÉ DE SHERBROOKE

ENERGIZING

Address: 2500, boulevard de l'Université, génie mécanique, Sherbrooke, PQ J1K 2R1

Phone: (819) 821-7144

Fax: (819) 821-7163

Course Duration: 45 hours

Course Description: How to carry out an economic and energy analysis of renewable energy conversion systems; mastering the operating principles of nuclear reactors; placing these energy sources in the Canadian and Quebec context.

Target Sector: Industrial

Specific Area: General

Audience: Engineers

UNIVERSITY COLLEGE OF THE CARIBOO

INTRODUCTION TO RENEWABLE/ALTERNATE ENERGY

Address: P.O. Box 3010, Kamloops, BC V2C 5N5

Phone: (604) 828-5422

Fax: (604) 828-5450

Course Duration: 9 hours

Course Description: For anyone interested in renewable or alternate energy, regardless of technical background. A variety of alternative energy equipment will be on display: solar photovoltaic & thermal - wind - hydro - biomass - geothermal - wave/tidal

Target Sector: Industrial, Commercial, Institutional

Specific Area: General

Audience: Other

Boilers

BUILDING OWNERS MANAGEMENT INSTITUTE (BOMI)

BASIC MATHEMATICS, BOILER & HEATING

Address:	885 Don Mills Road, Suite 106, Don Mills, ON M3C 1V9
Phone:	(416) 443-8790
Fax:	(416) 443-9970
Course Duration:	4 months
Course Description:	Reviews the principles of mathematics that are essential to operating building systems. Examines the inner workings of boilers, burners, controls, fittings, valves and pumps, as well as how they connect and interrelate. Also available in self-study.
Target Sector:	Commercial, Hospitality, Government, Retail
Specific Area:	Buildings
Audience:	Managers, Technologists/Technicians, Engineers

CENTRA GAS

BOILER EFFICIENCY IMPROVEMENT

Address:	200 Yorkland Boulevard, North York, ON M2J 5C6
Phone:	(416) 496-5297
Fax:	(416) 496-5301
Course Duration:	2 days
Course Description:	Co-sponsored in conjunction with the Boiler Efficiency Institute on boiler efficiency improvement.
Target Sector:	Institutional, Industrial, Commercial, Hospitality, Government
Specific Area:	General
Audience:	Managers, Engineers, Maintenance Personnel

Boilers

BOILER EFFICIENCY INSTITUTE

BOILER PLANT IMPROVEMENT

Address:	1852 Madras Drive, Baton Rouge, LA 70815
Phone:	(205) 821-3095
Fax:	(205) 887-3757
Course Duration:	2 days
Course Description:	Presentation of most recent trends to measure and improve efficiency of boilers and other steam facilities. Practical presentations and techniques used to conserve energy by elimination of losses through boilers and water heating systems, as well as demonstration of merits of the indirect test procedure to determine efficiency of a boiler.
Target Sector:	Industrial, Commercial, Institutional
Specific Area:	Buildings
Audience:	Technologists/Technicians

CIET INC.

BOILER PLANT SYSTEMS

Address:	P.O. Box 385, Station A, 2000 Simcoe Street N, Oshawa, ON L1H 7L7
Phone:	(905) 721-3050
Fax:	(905) 721-3059
Toll Free:	1-800-461-7618
Course Duration:	2 days
Course Description:	This CEMET course acquaints the participant with the concepts of boiler operation and efficiency. Provides instruction in the mass and energy balance calculations and the principles of steam thermodynamics used to analyze boiler operation. Burner operation with attention to fuels and combustion efficiency are discussed. Topics include Keys to a Successful Energy Management Program - Introduction to Boiler Efficiency - Mass and Energy Balance - Boiler Performance - Operating Parameters - Boiler Control Systems Description of Boilers - Waste Heat Recovery - Operation/Maintenance - Energy Management Opportunities - Environmental Impact of Energy Management Projects Financial Analysis.
Target Sector:	Commercial, Hospitality, Industrial, Institutional
Specific Area:	General
Audience:	Engineers, Maintenance Personnel, Managers

Boilers

HONEYWELL (ONTARIO)

BOILER START UP AND OPERATION

Address:	740 Ellesmere Road, ON15-03M, Scarborough, ON M1P 2V9
Phone:	(416) 293-8111
Fax:	(416) 297-4277
Course Duration:	3 days
Course Description:	In-depth information on the theory of combustion, burner components, boiler components, and combustion analysis. Includes types of burners and boilers, analysis of flue gas samples, checking for high stack temperatures, servicing of hydronic heating equipment, test steam traps, and evaluation of chemical maintenance programs for boilers and hydronic equipment.
Target Sector:	Commercial
Specific Area:	Buildings
Audience:	Technologists/Technicians, Operators, Maintenance Personnel

HYDRO-QUÉBEC

BOILER SYSTEM OPERATING EFFICIENCY

Address:	1010, rue Ste-Catherine Ouest, 9e étage, Montréal, PQ H3C 4S7
Phone:	(514) 392-8051
Fax:	(514) 392-8848
Course Duration:	2 days
Course Description:	Learning how to improve the operating efficiency of a boiler and increase energy economy.
Target Sector:	Industrial, Commercial, Institutional
Specific Area:	Buildings
Audience:	Managers, Technologists/Technicians

Boilers

ASSOCIATION OF ENERGY ENGINEERS

OPTIMIZING BOILER PERFORMANCE

Address: P.O. Box 1026, Lilburn, GA 30226

Phone: (404) 925-9633

Fax: (404) 381-9865

Course Duration: 2 days

Course Description: Provides a systematic approach to increase boiler efficiency in any type or size of facility. Gives 60 ways to improve boiler performance. Participants learn where to look for inefficiencies, how to monitor boiler performance, how to improve tune-up and maintenance procedures, and how to accurately measure and manage costs. Topics include boiler and plant systems - optimizing boiler plants, distribution system efficiency - efficiency calculation methods - combustion analysis - flow measurements - boiler controls, coal firing, waste heat recovery - steam traps, boiler water treatment.

Target Sector: Industrial, Commercial, Institutional, Government

Specific Area: Buildings

Audience: Managers, Engineers, Operators

BOILER EFFICIENCY INSTITUTE

STEAM PLANT IMPROVEMENT

Address: 1852 Madras Drive, Baton Rouge, LA 70815

Phone: (205) 821-3095

Fax: (205) 887-3757

Course Duration: 2 days

Course Description: Topics: boiler types - combustion controls - reducing costs via operation/maintenance - reducing costs via cogeneration - water quality program measurement - field testing of steam plant summary of field demonstration - maintenance and operation.

Target Sector: Industrial, Commercial

Specific Area: Buildings

Audience: Technologists/Technicians, Managers, Maintenance Personnel

Boilers

ASSOCIATION OF ENERGY ENGINEERS

STEAM TRAP TROUBLESHOOTING

Address:	P.O. Box 1026, Lilburn, GA 30226
Phone:	(404) 925-9633
Fax:	(404) 381-9865
Course Duration:	1 day
Course Description:	Course looks at how to remedy existing trap problems in facilities in order to avoid unnecessary expenses and to achieve significant energy and operational savings as a result. Looks at the most costly steam trap problems, utilizing simple maintenance techniques. Topics: how steam traps work - water hammer - trap troubleshooting - trap maintenance.
Target Sector:	Industrial, Commercial, Institutional, Government
Specific Area:	Buildings
Audience:	Managers, Engineers, Operators

Building Envelope

CMA CHALIFOUR, MARCOTTE ET ASSOCIÉS INC.

ADMINISTRATOR'S GUIDE

Address: 755, boulevard St-Jean, Bureau 300, Pointe-Claire, PQ H9R 5M9

Phone: (514) 694-4141

Fax: (514) 694-1713

Course Duration: 3 days

Course Description: How to institute a program of energy efficiency in a building, manage it, and ensure long-term results. Knowing the inventory of measures generally applicable to architectural envelopes, electrical and mechanical systems.

Target Sector: Industrial, Commercial, Institutional

Specific Area: Buildings

Audience: Managers

TESCOR

ASHRAE/IES 90.1 PROGRAM

Address: 2 Sheppard Avenue East, Suite 200, North York, ON M2N 5Y7

Phone: (416) 226-6565

Fax: (416) 226-6576

Course Duration: 2 days

Course Description: Program describes how the ASHRAE/IES 90.1 Standard is to be applied to the design of buildings. Upon completion of the program, participants will be able to understand the different sections of Ontario Hydro's New Building Construction Program application form and describe the benefits of compliance with the ASHRAE 90.1 guidelines. Topics: ASHRAE/IES 90.1 standards and benefits of compliance - energy management process - energy monitoring - heating, ventilation and air-handling units - air quality - building automation.

Target Sector: Industrial, Commercial, Institutional

Specific Area: Buildings

Audience: Managers, Engineers, Architects

Building Envelope

LANDIS & GYR POWERS LTÉE

ATC ENERGY MANAGEMENT

Address: 6160, route Transcanadienne, Saint-Laurent, PQ H4T 1X9

Phone: (514) 341-3045

Fax: (514) 341-3658

Course Duration: 2 days

Course Description: How to select and apply the elements of control systems in order to maximize efficiency and improve energy economy. Practical "on-the-job" instruction on pneumatic controls is included.

Target Sector: Industrial, Commercial, Institution

Audience: Technologists/Technicians, Managers, Engineers

SENECA COLLEGE

BES - FACILITY MANAGER

Address: 16775 Yonge Street, Suite 217, Newmarket, ON L3Y 8J4

Phone: (905) 727-8577

Fax: (905) 898-7014

Course Duration: Continuing Education

Course Description: To train managers in implementing and operating energy-efficient building operations; principles and practices of managing staff; understanding the interrelationship of building components including internal building systems and external property maintenance; effective communications techniques; safety concerns with respect to relevant codes and practices; tools for financial analysis; and the means of conducting business analysis and plans. Upon completion of all subjects in the Facility Manager Certificate Program (excluding the open option) and five years of working experience as a property or facility manager, candidates are eligible for an Accredited Membership Certificate from The Institute of Housing Management. Also available in Distance Education Format.

Prerequisite: BES Class II and Class I Certificates

Topics: Property and Building Administration - Building Environmental Systems: A Practical Overview- Site Maintenance and Building Safety - Strategic and Financial Planning for Facility Managers - Human Relations for Facility Managers - Energy Efficiency in Large Buildings - Effective Communications for Engineers and Technologists - Open option - Introduction to Computer Information Systems or General Principles of Fire Safety.

Target Sector: Institutional, Commercial

Specific Area: Buildings

Audience: Operators, Managers, Engineers

Building Envelope

CAMBRIAN COLLEGE

BUILDING ENVIRONMENTAL SYSTEMS

Address:	1400 Barrydowne Road, Sudbury, ON P3A 3V8
Phone:	(705) 556-8101
Fax:	(705) 524-7327
Course Duration:	Continuing Education
Course Description:	For those interested in the operation of healthy, energy-efficient and economically viable buildings with focus on the mechanical operations. Supported by the Ontario Ministry of Environment and Energy the program is periodically upgraded to reflect the latest developments in energy management, environmental enhancement, health & safety. Successful completion of the Entry Level Course and all six Class II courses earns a certificate with the designation of Building Environmental Systems Operator-Class II. Successful completion of the Entry Level Course, all Class II and two Class I courses earns a Building Environmental Sytems Operator - Class I certificate. Topics are as follows: **Entry Level** - Building Systems: A Practical Overview **Class II** - Air-Conditioning and Refrigeration - Air Handling and Preventive Maintenance - Controls-Electrical - Heating - Water Treatment **Class I** - Pipe Systems Design - Air Systems Design - Energy Efficiency in Large Buildings - Hospital Building Systems
Target Sector:	Institutional, Commercial
Specific Area:	Buildings
Audience:	Operators, Managers, Engineers

Building Envelope

FANSHAWE COLLEGE

BUILDING ENVIRONMENTAL SYSTEMS

Address:	1460 Oxford Street, P.O. Box 4005, London, ON N5W 5H1
Phone:	(519) 452-4100
Fax:	(519) 659-5781
Course Duration:	Continuing Education
Course Description:	For those interested in the operation of healthy, energy-efficient and economically viable buildings with focus on the mechanical operations. Supported by the Ontario Ministry of Environment and Energy the program is periodically upgraded to reflect the latest developments in energy management, environmental enhancement, health & safety. Successful completion of the Entry Level Course and all six Class II courses earns a certificate with the designation of Building Environmental Systems Operator - Class II. Successful completion of the Entry Level Course, all Class II and two Class I courses earns a Building Environmental Sytems Operator - Class I certificate. Topics are as follows: **Entry Level** - Building Systems: A Practical Overview **Class II** - Air-Conditioning and Refrigeration - Air Handling and Preventive Maintenance - Controls - Electrical - Heating - Water Treatment **Class I** - Pipe Systems Design - Air Systems Design - Energy Efficiency in Large Buildings - Hospital Building Systems
Target Sector:	Institutional, Commercial
Specific Area:	Buildings
Audience:	Operators, Managers, Engineers

Building Envelope

DURHAM COLLEGE

BUILDING ENVIRONMENTAL SYSTEMS

Address: 2000 Simcoe Street North, P.O. Box 385, Oshawa, ON L1H 7L7

Phone: (905) 721-2000/2238

Fax: (905) 721-3182

Toll-Free: 1-800-461-0549

Course Duration: Continuing Education

Course Description: For those interested in the operation of healthy, energy-efficient and economically viable buildings with focus on the mechanical operations. Supported by the Ontario Ministry of Environment and Energy the program is periodically upgraded to reflect the latest developments in energy management, environmental enhancement, health & safety. Successful completion of the Entry Level Course and all six Class II courses earns a certificate with the designation of Building Environmental Systems Operator - Class II. Successful completion of the Entry Level Course, all Class II and two Class I courses earns a Building Environmental Sytems Operator - Class I certificate.

Topics are as follows:
Entry Level
- Building Sytems: A Practical Overview

Class II
- Air-Conditioning and Refrigeration - Air Handling and Preventive Maintenance - Controls
- Electrical - Heating - Water Treatment

Class I
- Pipe Systems Design - Air Systems Design - Energy Efficiency in Large Buildings
- Hospital Building Systems

Target Sector: Institutional, Commercial

Specific Area: Buildings

Audience: Operators, Managers, Engineers

Building Envelope

SENECA COLLEGE

BUILDING ENVIRONMENTAL SYSTEMS

Address:	16775 Yonge Street, Suite 217, Newmarket, ON L3Y 8J4
Phone:	(905) 727-8577
Fax:	(905) 898-7014
Course Duration:	Continuing Education
Course Description:	For those interested in the operation of healthy, energy-efficient and economically viable buildings with focus on the mechanical operations. Supported by the Ontario Ministry of Environment and Energy the program is periodically upgraded to reflect the latest developments in energy management, environmental enhancement, health & safety. Successful completion of the Entry Level Course and all six Class II courses earns a certificate with the designation of Building Environmental Systems Operator - Class II. Successful completion of the Entry Level Course, all Class II and two Class I courses earns a Building Environmental Sytems Operator - Class I certificate. This course is also available in Distance Education format. Topics are as follows: **Entry Level** - Building Systems: A Practical Overview **Class II** - Air-Conditioning and Refrigeration - Air Handling and Preventive Maintenance - Controls - Electrical - Heating - Water Treatment **Class I** - Pipe Systems Design - Air Systems Design - Energy Efficiency in Large Buildings - Hospital Building Systems
Target Sector:	Institutional, Commercial
Specific Area:	Buildings
Audience:	Operators, Managers, Engineers

Building Envelope

ST. LAWRENCE COLLEGE

BUILDING ENVIRONMENTAL SYSTEMS

Address:	2288 Parkedale Avenue, Brockville, ON K6V 5X3
Phone:	(613) 544-5400/1220
Fax:	(613) 545-3920
Course Duration:	Continuing Education
Course Description:	For those interested in the operation of healthy, energy-efficient and economically viable buildings with focus on the mechanical operations. Supported by the Ontario Ministry of Environment and Energy the program is periodically upgraded to reflect the latest developments in energy management, environmental enhancement, health & safety. Successful completion of the Entry Level Course and all six Class II courses earns a certificate with the designation of Building Environmental Systems Operator - Class II. Successful completion of the Entry Level Course, all Class II and two Class I courses earns a Building Environmental Sytems Operator - Class I certificate. Topics are as follows: **Entry Level** - Building Systems: A Practical Overview **Class II** - Air-Conditioning and Refrigeration - Air Handling and Preventive Maintenance - Controls - Electrical - Heating - Water Treatment **Class I** - Pipe Systems Design - Air Systems Design - Energy Efficiency in Large Buildings - Hospital Building Systems
Target Sector:	Institutional, Commercial
Specific Area:	Buildings
Audience:	Operators, Managers, Engineers

Building Envelope

GEORGIAN COLLEGE

BUILDING ENVIRONMENTAL SYSTEMS

Address: 1 Georgian Drive, Barrie, ON L4M 3X9

Phone: (705) 325-2705, extension 221

Fax: (705) 325-3690

Course Duration: Continuing Education

Course Description: For those interested in the operation of healthy, energy-efficient ar d economically viable buildings with focus on the mechanical operations. Supported by the Ontario Ministry of Environment and Energy the program is periodically upgraded to reflect the latest developments in energy management, environmental enhancement, health & safety. Successful completion of the Entry Level Course and all six Class II courses earns a certificate with the designation of Building Environmental Systems Operator - Class II. Successful completion of the Entry Level Course, all Class II and two Class I courses earns a Building Environmental Sytems Operator - Class I certificate.

Topics are as follows:
Entry Level
- Building Systems: A Practical Overview

Class II
- Air-Conditioning and Refrigeration - Air Handling and Preventive Maintenance - Controls
- Electrical-Heating-Water Treatment

Class I
- Pipe Systems Design - Air Systems Design - Energy Efficiency in Large Buildings
- Hospital Building Systems

Target Sector: Institutional, Commercial

Specific Area: Buildings

Audience: Operators, Managers, Engineers

Building Envelope

MOHAWK COLLEGE

BUILDING ENVIRONMENTAL SYSTEMS

Address:	135 Fennell Avenue West, Hamilton, ON L8N 3T2
Phone:	(905) 575-2203
Fax:	(905) 575-2292
Course Duration:	Continuing Education
Course Description:	For those interested in the operation of healthy, energy-efficient and economically viable buildings with focus on the mechanical operations. Supported by the Ontario Ministry of Environment and Energy the program is periodically upgraded to reflect the latest developments in energy management, environmental enhancement, health & safety. Successful completion of the Entry Level Course and all six Class II courses earns a certificate with the designation of Building Environmental Systems Operator - Class II. Successful completion of the Entry Level Course, all Class II and two Class I courses earns a Building Environmental Sytems Operator - Class I certificate. Topics are as follows: **Entry Level** - Building Systems: A Practical Overview **Class II** - Air-Conditioning and Refrigeration - Air Handling and Preventive Maintenance - Controls - Electrical - Heating - Water Treatment **Class I** - Pipe Systems Design - Air Systems Design - Energy Efficiency in Large Buildings - Hospital Building Systems
Target Sector:	Institutional, Commercial
Specific Area:	Buildings
Audience:	Operators, Managers, Engineers

Building Envelope

NIAGARA COLLEGE

BUILDING ENVIRONMENTAL SYSTEMS

Address:	Woodlawn Road, P.O. Box 1005, Welland, ON L3B 5S2
Phone:	(905) 735-2211, extension 7656
Fax:	(905) 735-0419
Course Duration:	Continuing Education
Course Description:	For those interested in the operation of healthy, energy-efficient and economically viable buildings with focus on the mechanical operations. Supported by the Ontario Ministry of Environment and Energy the program is periodically upgraded to reflect the latest developments in energy management, environmental enhancement, health & safety. Successful completion of the Entry Level Course and all six Class II courses earns a certificate with the designation of Building Environmental Systems Operator - Class II. Successful completion of the Entry Level Course, all Class II and two Class I courses earns a Building Environmental Sytems Operator - Class I certificate. Topics are as follows: **Entry Level** - Building Systems: A Practical Overview **Class II** - Air-Conditioning and Refrigeration - Air Handling and Preventive Maintenance - Controls - Electrical - Heating - Water Treatment **Class I** - Pipe Systems Design - Air Systems Design - Energy Efficiency in Large Buildings - Hospital Building Systems
Target Sector:	Institutional, Commercial
Specific Area:	Buildings
Audience:	Operators, Managers, Engineers

Building Envelope

NORTHERN COLLEGE

BUILDING ENVIRONMENTAL SYSTEMS

Address: Highway 101E, P.O. Box 2002, South Porcupine, ON P0N 1H0

Phone: (705) 235-7230

Fax: (705) 235-6923

Course Duration: Continuing Education

Course Description: For those interested in the operation of healthy, energy-efficient and economically viable buildings with focus on the mechanical operations. Supported by the Ontario Ministry of Environment and Energy the program is periodically upgraded to reflect the latest developments in energy management, environmental enhancement, health & safety. Successful completion of the Entry Level Course and all six Class II courses earns a certificate with the designation of Building Environmental Systems Operator - Class II. Successful completion of the Entry Level Course, all Class II and two Class I courses earns a Building Environmental Sytems Operator - Class I certificate.

Topics are as follows:
Entry Level
- Building Systems: A Practical Overview

Class II
- Air-Conditioning and Refrigeration - Air Handling and Preventive Maintenance - Controls
- Electrical - Heating - Water Treatment

Class I
- Pipe Systems Design - Air Systems Design - Energy Efficiency in Large Buildings
- Hospital Building Systems

Target Sector: Institutional, Commercial

Specific Area: Buildings

Audience: Operators, Managers, Engineers

Building Envelope

SIR SANDFORD FLEMING COLLEGE

BUILDING ENVIRONMENTAL SYSTEMS

Address:	Brealey Drive, Peterborough, ON K9J 7B1
Phone:	(705) 876-1614
Fax:	(705) 876-9423
Course Duration:	Continuing Education
Course Description:	For those interested in the operation of healthy, energy-efficient and economically viable buildings with focus on the mechanical operations. Supported by the Ontario Ministry of Environment and Energy the program is periodically upgraded to reflect the latest developments in energy management, environmental enhancement, health & safety. Successful completion of the Entry Level Course and all six Class II courses earns a certificate with the designation of Building Environmental Systems Operator - Class II. Successful completion of the Entry Level Course, all Class II and two Class I courses earns a Building Environmental Sytems Operator - Class I certificate. Topics are as follows: **Entry Level** - Building Systems: A Practical Overview **Class II** - Air-Conditioning and Refrigeration - Air Handling and Preventive Maintenance - Controls - Electrical - Heating - Water Treatment **Class I** - Pipe Systems Design - Air Systems Design - Energy Efficiency in Large Buildings - Hospital Building Systems
Target Sector:	Institutional, Commercial
Specific Area:	Buildings
Audience:	Operators, Managers, Engineers

Building Envelope

ST. CLAIR COLLEGE

BUILDING ENVIRONMENTAL SYSTEMS

Address:	1001 Grand Avenue West, (Thames Campus), Chatham, ON N7M 5W4
Phone:	(519) 354-9100, extension 255
Fax:	(519) 354-5406
Course Duration:	Continuing Education
Course Description:	For those interested in the operation of healthy, energy-efficient and economically viable buildings with focus on the mechanical operations. Supported by the Ontario Ministry of Environment and Energy the program is periodically upgraded to reflect the latest developments in energy management, environmental enhancement, health & safety. Successful completion of the Entry Level Course and all six Class II courses earns a certificate with the designation of Building Environmental Systems Operator - Class II. Successful completion of the Entry Level Course, all Class II and two Class I courses earns a Building Environmental Sytems Operator - Class I certificate. Topics are as follows: **Entry Level** - Building Systems: A Practical Overview **Class II** - Air-Conditioning and Refrigeration - Air Handling and Preventive Maintenance - Controls - Electrical - Heating - Water Treatment **Class I** - Pipe Systems Design - Air Systems Design - Energy Efficiency in Large Buildings - Hospital Building Systems
Target Sector:	Institutional, Commercial
Specific Area:	Buildings
Audience:	Operators, Managers, Engineers

Building Envelope

SENECA COLLEGE

BUILDING FOR ENERGY EFFICIENCY

Address:	16775 Yonge Street, Suite 217, Newmarket, ON L3Y 8J4
Phone:	(905) 727-8577
Fax:	(905) 898-7014
Course Duration:	36 hours
Course Description:	Subject covers methods of designing and detailing for energy efficiency with emphasis on cost-effective and practical methods. Topics: application of air/vapour barriers and insulation materials to foundations, floors, walls, and ceilings - window and door selection - heating, cooling equipment - passive solar design.
Target Sector:	Industrial, Institutional, Commercial Retail
Specific Area:	Buildings
Audience:	Architects, Contractors, Trades

MOHAWK COLLEGE

BUILDING FOR ENERGY EFFICIENCY

Address:	135 Fennell Avenue West, Hamilton, ON L8N 3T2
Phone:	(905) 575-2203
Fax:	(905) 575-2292
Course Duration:	35 hours
Course Description:	This course details methods of designing and detailing for energy efficiency with emphasis on cost-effective and practical methods. Topics: application of air/vapour barriers and insulation materials to foundations, floors, walls, and ceilings - window and door selection - heating/cooling equipment - passive solar design.
Target Sector:	Industrial, Commercial
Specific Area:	Buildings
Audience:	Managers, Technologists/Technicians, Maintenance Personnel

Building Envelope

TESCOR

BUILDING OPERATIONS WORKSHOP

Address: 2 Sheppard Avenue East, Suite 200, North York, ON M2N 5Y7

Phone: (416) 226-6565

Fax: (416) 226-6576

Course Duration: 3 days

Course Description: Focuses on increasing the knowledge and performance of the operation and maintenance personnel. This program provides many benefits including reduction of operating costs, upgraded technical skills, consistent and efficient building operation and improved building operation. Topics: energy management process - energy monitoring - heating, ventilation and air handling units - air quality - building automation - other related topics.

Target Sector: Industrial, Commercial, Institutional

Specific Area: Buildings

Audience: Operators, Trades

UNIVERSITÉ CONCORDIA

BUILDING SERVICE SYSTEMS

Address: 1455, boulevard de Maisonneuve Ouest, Études sur le bâtiment, Montréal, PQ H3G 1M8

Phone: (514) 848-3200

Fax: (514) 848-7965

Course Duration: 45 hours

Course Description: Operating principles of the services and installations of a building, including electricity, gas, communications, water provision and distribution. Introduction to the plans, standards and codes for the network of public utilities.

Target Sector: Industrial, Commercial, Institutional, Government

Specific Area: Buildings

Audience: Architects, Engineers, Other

Building Envelope

SCANADA CONSULTANTS LIMITED
CUSTOMIZED TRAINING

Address: 446 Reynolds Street, Oakville, ON L6J 3M4

Phone: (905) 842-3633

Fax: (905) 842-3638

Course Duration: varies

Course Description: Numerous courses related to the building sciences, energy retrofitting and energy auditing. These courses have been oriented to different skills and audiences, ranging from tradespersons and contractors to engineers and architects. Most courses are developed from existing course materials and tailored to the client's immediate needs, course lengths and entry-level skills.

Target Sector: Industrial, Commercial

Specific Area: General

Audience: Varies

SCANADA CONSULTANTS LIMITED
CUSTOMIZED TRAINING

Address: 446 Reynolds Street, Oakville, ON L6J 3M4

Phone: (905) 842-3633

Fax: (905) 842-3638

Course Duration: varies

Course Description: Customized training provided in such areas as "Guide to the Use of Masonry and Concrete in Energy-Efficient Buildings" and "Energy Conservation in Rehabilitation of Existing Dwellings". Have developed and delivered skill training courses for residential renovation. Topics: building science - building technology - building construction/renovation - energy conservation in buildings.

Target Sector: Industrial, Commercial, Institutional, Government

Specific Area: General

Audience: Architects, Contractors, Trades

Building Envelope

TARGET COMMUNICATIONS

CUSTOMIZED TRAINING

Address:	64 Judson Street, Toronto, ON M8Z 1A4
Phone:	(416) 252-7259
Fax:	(416) 252-8035
Course Duration:	varies
Course Description:	Customized training and a systems approach to building envelope issues. Identifying and solving problems in existing buildings is the key. In new buildings, a pro-active approach to avoiding problems is taken. Topics: interaction between various products in buildings - indoor air quality - implications of heat, air and moisture flows - building envelope - mechanical systems - HVAC systems
Target Sector:	Industrial, Institutional, Commercial, Hospitality, Government
Specific Area:	Buildings
Audience:	Managers, Technologists/Technicians, Engineers

BUILDING OWNERS MANAGEMENT INSTITUTE (BOMI)

DESIGN, OPERATION, MAINTENANCE OF BUILDING SYSTEM 1

Address:	885 Don Mills Road, Suite 106, Don Mills, ON M3C 1V9
Phone:	(416) 443-8790
Fax:	(416) 443-9970
Course Duration:	4 months
Course Description:	Fundamental knowledge of the principles involved in engineering and building structures. Course provides thorough understanding of the way a building operates at peak efficiency. Also available in self-study.
Target Sector:	Commercial, Hospitality, Government, Retail
Specific Area:	Buildings
Audience:	Managers, Technologists/Technicians, Engineers

Building Envelope

BUILDING OWNERS MANAGEMENT INSTITUTE (BOMI)

DESIGN,OPERATION, MAINTENANCE OF BUILDING SYSTEM 2

Address:	885 Don Mills Road, Suite 106, Don Mills, ON M3C 1V9
Phone:	(416) 443-8790
Fax:	(416) 443-9970
Course Duration:	4 months
Course Description:	How to develop and maintain an efficient building environment. A working knowledge of all integrated building systems and the care and maintenance of those systems will be covered. Also available in self-study.
Target Sector:	Commercial, Hospitality, Government, Retail
Specific Area:	Buildings
Audience:	Managers, Technologists/Technicians, Engineers

FANSHAWE COLLEGE

ENERGY CONSERVATION IN BUILDINGS

Address:	1460 Oxford Street, P.O. Box 4005, London, ON N5W 5H1
Phone:	(519) 452-4100
Fax:	(519) 659-5781
Course Duration:	Distance Education
Course Description:	Successful completion of the required set of courses with an 80% mark allows you to receive a program certificate from TPC Systems and Fanshawe College. Topics: energy conservation basics - reducing energy losses - heating/cooling system efficiency - energy losses in mechanical systems - energy lost as electricity.
Target Sector:	Institutional
Specific Area:	Buildings
Audience:	Maintenance Personnel

Building Envelope

ASHRAE

ENERGY-EFFICIENT BUILDINGS - STANDARD 90.1

Address: 1791 Tullie Circle North East, Atlanta, GA 30329

Phone: (404) 636-8400

Fax: (404) 321-5478

Course Duration: 2 days

Course Description: Course stresses practical application of the standard by using the LTGSTD and ENVSTD computer programs to perform example energy analysis of commercial buildings. Provides quick, effective methods to comply with energy efficiency regulations. Topics: structure and use of Standard 90.1 - least time compliance procedure - energy analysis software - procedures, advantages of compliance.

Target Sector: Industrial, Commercial, Government

Specific Area: Buildings

Audience: Managers, Engineers, Operators

ST. LAWRENCE COLLEGE

ENERGY MANAGEMENT

Address: 2288 Parkedale Avenue, Brockville, ON K6V 5X3

Phone: (613) 544-5400, extension 1220

Fax: (613) 545-3920

Course Duration: 30 hours

Course Description: To conserve energy, its use must be managed. Modern control processes now do this. The building manager must, therefore, be familiar with the concepts of the building envelope and how heating, cooling, electrical and lighting systems interact to consume energy. Heat reclamation and solar energy concepts are also discussed.

Target Sector: Institutional, Commercial

Specific Area: Buildings

Audience: Managers, Maintenance Personnel, Engineers

Building Envelope

SAIT (SOUTHERN ALBERTA INSTITUTE OF TECHNOLOGY)

ENERGY MANAGEMENT FOR BUILDING OPERATORS

Address: 1301 - 16 Avenue NW, Calgary, AB T2M 0L4

Phone: (403) 284-8290

Fax: (403) 284-8091

Course Duration:

Course Description: A component of the twelve-course Building Operator Technician Program offered to meet the growing needs of operating large high-rise buildings. Upon successful completion of this program students may apply for a SAIT Building Operator Technician Certificate which is equivalent to a full-time one-year certificate. The student may also apply to ASET for Technician Certification for Building Operator Technician. Prerequisite: Grade 12, including Math 20 or 23, and should have a Building Operator A Certificate.

Target Sector: Institutional

Specific Area: Buildings

Audience: Technologists/Technicians

ENERGY TRAINING ONTARIO

ENERGY MANAGEMENT IN BUILDINGS

Address: 16775 Yonge Street, Suite 217, Newmarket, ON L3Y 8J4

Phone: (905) 727-8577

Fax: (905) 898-7014

Course Duration: 39 hours

Course Description: Covers energy efficiency as it relates to building management and application, heating and cooling, air handling, lighting and electrical systems, and building control systems.

Target Sector: Commercial

Specific Area: Buildings

Audience: Technologists/Technicians, Managers, Maintenance Personnel

Building Envelope

TESCOR

ENERGY MANAGEMENT PROGRAM

Address: 2 Sheppard Avenue East, Suite 200, North York, ON M2N 5Y7

Phone: (416) 226-6565

Fax: (416) 226-6576

Course Duration: 1 day

Course Description: Program focuses on operation and maintenance practices for energy conservation and is tailored to meet client needs. Topics: energy management - low-cost/no-cost lighting implementation - HVAC audits and implementation - energy accounting - other related topics.

Target Sector: Industrial, Commercial

Specific Area: Buildings

Audience: Managers, Trades

COLLEGE DE SAINT-HYACINTHE

ENERGY MANAGEMENT SYSTEM

Address: 3000, av. Boullé, Saint-Hyacinthe, PQ J2S 1H9

Phone: (514) 773-6800

Fax: (514) 773-9971

Course Duration: 90 hours

Course Description: Acquisition of theories and how to use techniques to maintain buildings and equipment in good condition with a system of planned maintenance; to regulate building systems with central controls.

Target Sector: Industrial, Commercial

Specific Area: Buildings

Audience: Technologists/Technicians, Operators, Managers

Building Envelope

BUILDING OWNERS MANAGEMENT INSTITUTE (BOMI)

FACILITIES MANAGEMENT & WORKING ENVIRONMENT

Address:	885 Don Mills Road, Suite 106, Don Mills, ON M3C 1V9
Phone:	(416) 443-8790
Fax:	(416) 443-9970
Course Duration:	4 months
Course Description:	Introduction to strategic planning and management, corporate finance and capital investment, management information systems, resource maximization, and physical asset management. Also, how to create a facilities management plan. Available as self-study, as well.
Target Sector:	Commercial, Hospitality, Government
Specific Area:	Buildings
Audience:	Managers, Engineers, Operators

RYERSON POLYTECHNIC UNIVERSITY

FACILITY MANAGEMENT

Address:	350 Victoria Street, Toronto, ON M5B 2K3
Phone:	(416) 979-5035
Fax:	(416) 979-5277
Course Duration:	Continuing Education
Course Description:	This certificate is obtained by completion of seven night school courses. Courses are as follows: - Facility Management Theory - Professional Practice I - Professional Practice II - Office Facilities Space Management - Computer Applications in Facility Management - Real Estate Planning and Development - Building Commissioning
Target Sector:	Industrial, Commercial, Institutional
Specific Area:	Buildings
Audience:	Other

Building Envelope

ASSOCIATION OF ENERGY ENGINEERS

FUNDAMENTALS INDOOR AIR QUALITY

Address:	P.O. Box 1026, Lilburn, GA 30226
Phone:	(404) 925-9633
Fax:	(404) 381-9865
Course Duration:	2 days
Course Description:	Covers the fundamental components of effective indoor air quality management including air pollutants, associated health risks, measurement techniques, mitigating problems, preventative strategies, energy and IAQ.
Target Sector:	Commercial, Institutional, Government
Specific Area:	Buildings
Audience:	Managers, Engineers, Technologists/Technicians

ASHRAE

FUNDAMENTALS OF AIR CONDITIONING PROCESS

Address:	1791 Tullie Circle North East, Atlanta, GA 30329
Phone:	(404) 636-8400
Fax:	(404) 321-5478
Course Duration:	2 days
Course Description:	A fundamental entry-level course designed to be presented by local universities, colleges, CEGEPs, companies and individual ASHRAE chapters. Instructor and student manuals are provided. For information on how to present the course in your area contact Anne Forbes, Director of Education, at 404-636-8400.
Target Sector:	Industrial, Commercial, Government
Specific Area:	Buildings
Audience:	Managers, Engineers, Operators

Building Envelope

ÉCOLE POLYTECHNIQUE

GLOBAL COSTS ON LIFECYCLE BUILDINGS & EQUIPMENT

Address:	Institut de génie énergétique, C.P. 6079, Succursale A, Montréal, PQ H3C 3A7
Phone:	(514) 340-4803
Fax:	(514) 340-4192
Course Duration:	1 day
Course Description:	Consideration for the total cost of ownership and use of a property or business. This method of evaluation may be utilized for projects of energy conservation in construction and renovation of property, the acquisition of vehicles or rolling stock or replacement equipment.
Target Sector:	Industrial, Commercial
Specific Area:	Buildings
Audience:	Managers, Engineers, Other

ASHRAE

INDOOR AIR QUALITY

Address:	1791 Tullie Circle North East, Atlanta, GA 30329
Phone:	(404) 636-8400
Fax:	(404) 321-5478
Course Duration:	2 days
Course Description:	Learn the causes of poor indoor air quality, the impact of IAQ upon the health and comfort of building occupants and strategies for designing healthy buildings. Provides an in-depth overview of potential pollutants and their effects on human health as a foundation to understanding and meeting the requirements for compliance with ASHRAE Standard 62-89. Topics: pollutant identification - control strategies - energy conservation considerations - monitoring strategies - performance evaluations.
Target Sector:	Industrial, Commercial, Government
Specific Area:	Buildings
Audience:	Managers, Engineers, Operators

Building Envelope

ASSOCIATION OF ENERGY ENGINEERS

INDOOR AIR QUALITY PROBLEMS

Address: P.O. Box 1026, Lilburn, GA 30226

Phone: (404) 925-9633

Fax: (404) 381-9865

Course Duration: 2 days

Course Description: Course looks at diagnostic and mitigative techniques to identify and solve both existing and potential indoor air quality problems. Participants will find out how to pinpoint the presence of a wide range of common indoor air contaminants. Includes explanations of specific mitigative strategies for solving each type of indoor air quality problem covered. Topics: indoor air contaminant sources, removal methods - ventilation systems - diagnostic procedures - air quality mitigation strategies

Target Sector: Commercial, Institutional, Government

Specific Area: Buildings

Audience: Managers, Engineers, Operators

BUILDING OWNERS MANAGEMENT INSTITUTE (BOMI)

MANAGING FACILITIES TECHNOLOGY (1221)

Address: 885 Don Mills Road, Suite 106, Don Mills, ON M3C 1V9

Phone: (416) 443-8790

Fax: (416) 443-9970

Course Duration: 4 months

Course Description: An in-depth study of the technology commonly used in facilities and the skills needed to maximize use. Learn how to maintain control of new technologies and enhancement, evaluate the bottom line impact of present technological services, and use this assessment to prepare for the future. Also available in self-study.

Target Sector: Commercial, Hospitality, Government, Retail

Specific Area: Buildings

Audience: Managers, Technologists/Technicians, Operators

Cogeneration,Thermal Storage

ASSOCIATION OF ENERGY ENGINEERS

COGENERATION/ON-SITE GENERATION

Address:	P.O. Box 1026, Lilburn, GA 30226
Phone:	(404) 925-9633
Fax:	(404) 381-9865
Course Duration:	2 days
Course Description:	Provides a thorough review of the basics of cogeneration and on-site power projects addressing all of the essential legal/regulatory, financial, managerial and technical elements. Power generation, performance auditing, combustion cycles, prime mover options, associated fuels and generating strategies are covered.
Target Sector:	Industrial, Commercial, Institutional, Government
Specific Area:	Buildings
Audience:	Managers, Engineers, Technologists/Technicians

BUILDING OWNERS MANAGEMENT INSTITUTE (BOMI)

REFRIGERATION SYSTEMS AND ACCESSORIES

Address:	885 Don Mills Road, Suite 106, Don Mills, ON M3C 1V9
Phone:	(416) 443-8790
Fax:	(416) 443-9970
Course Duration:	4 months
Course Description:	Course reviews the basic refrigeration cycle and refrigeration system components, as well as how to operate and maintain reciprocating and absorption refrigeration systems. Also available in self-study.
Target Sector:	Commercial, Hospitality, Government, Retail
Specific Area:	Buildings
Audience:	Managers, Technologists/Technicians, Engineers

Cogeneration,Thermal Storage

CONSULGAZ

INDUSTRIAL COGENERATION TECHNIQUES

Address:	1717, rue Du Havre, Montréal, PQ H2K 2X3
Phone:	(514) 598-3305
Fax:	(514) 598-3799
Course Duration:	1 - 5 days
Course Description:	To familiarize participants with the different technologies relative to cogeneration, including economic factors, design and selection of equipment.
Target Sector:	Industrial
Specific Area:	General
Audience:	Technologists/Technicians, Managers, Engineers

Combustion Control

JANUS TECHNOLOGY

CUSTOMIZED TRAINING

Address:	P.O. Box 2872, Rockford, IL 61132
Phone:	(815) 282-8044
Fax:	(815) 282-8043
Course Duration:	varies
Course Description:	Customized training is provided through industry-wide or inplant seminars on industrial combustion equipment. Focus is on improved productivitiy and quality, including energy efficiency issues as these relate to the operation of plant equipment.
Target Sector:	Industrial
Specific Area:	General
Audience:	Managers, Engineers, Operators

CENTRA GAS

FUNDAMENTALS OF INDUSTRIAL COMBUSTION

Address:	200 Yorkland Boulevard, North York, ON M2J 5C6
Phone:	(416) 496-5297
Fax:	(416) 496-5301
Course Duration:	2 days
Course Description:	Co-sponsored with Janus Technology (Dick Bennett, 815-282-8044)
Target Sector:	Industrial, Institutional, Commercial, Hospitality, Government
Specific Area:	General
Audience:	Managers, Technologists/Technicians, Engineers

Control Systems

LANDIS & GYR POWERS LTÉE

BUILDING MANAGEMENT DISTRIBUTED DIGITAL CONTROLS

Address:	6160, route Transcanadienne, Saint-Laurent, PQ H4T 1X9
Phone:	(514) 341-3045
Fax:	(514) 341-3658
Course Duration:	2 days
Course Description:	How RNR building management maximises the operation efficiency and reduces costs. How to select and apply RNR strategies along with building modernization, and how to renovate existing systems to make them compatible with current standards.
Target Sector:	Industrial, Commercial, Institutional
Specific Area:	Buildings
Audience:	Technologists/Technicians, Managers, Engineers

HONEYWELL (ONTARIO)

BOILER AND BURNER CONTROL SYSTEMS

Address:	740 Ellesmere Road, ON15-03M, Scarborough, ON M1P 2V9
Phone:	(416) 293-8111
Fax:	(416) 297-4277
Course Duration:	3 days
Course Description:	Provides in-depth, hands-on information on the function and operation of burner controls, programming controls, and limit controls.
Target Sector:	Commercial
Specific Area:	Buildings
Audience:	Technologists/Technicians, Operators, Maintenance Personnel

Control Systems

BUILDING OWNERS MANAGEMENT INSTITUTE (BOMI)

CONTROL SYSTEMS (1114)

Address:	885 Don Mills Road, Suite 106, Don Mills, ON M3C 1V9
Phone:	(416) 443-8790
Fax:	(416) 443-9970
Course Duration:	4 months
Course Description:	Course provides a basic understanding of control theory and describes the components of pneumatic, electric and electronic control systems. Sample HVAC control system applications are reviewed to show how control systems are used in commercial buildings. Also available in self-study.
Target Sector:	Commercial, Hospitality, Government, Retail
Specific Area:	Buildings
Audience:	Managers, Technologists/Technicians, Engineers

BOUTHILLETTE, PARIZEAU & ASSOCIÉS INC.

CONTROLS (CENTRALIZED OPERATING)

Address:	9825, rue Verville, Montréal, PQ H3L 3E1
Phone:	(514) 383-3747
Fax:	(514) 383-8760
Course Duration:	1 day
Course Description:	Basic principles of centralized operating controls.
Target Sector:	Industrial, Commercial, Institutional
Specific Area:	Buildings
Audience:	Engineers, Technologists/Technicians, Maintenance Personnel

Control Systems

GOVERNMENT SERVICES CANADA

DIRECT DIGITAL CONTROLS

Address:	2250 Riverside Drive, Sir Charles Tupper Bldg. Ottawa, ON K1A 0M2
Phone:	(613) 736-2257
Fax:	(613) 998-8360
Course Duration:	4.5 days
Course Description:	A practical course which combines non-mathematical theory with hands-on laboratory work. It introduces control concepts generically but uses plenty of examples of pneumatic, electric, electronic and DDC systems, including energy management control systems (EMCS).
Target Sector:	Industrial, Commercial
Specific Area:	General
Audience:	Managers, Technologists/Technicians, Maintenance Personnel

HONEYWELL (ONTARIO)

EFFECTIVE ELECTRIC COMFORT CONTROLS

Address:	740 Ellesmere Road, ON15-03M, Scarborough, ON M1P 2V9
Phone:	(416) 293-8111
Fax:	(416) 297-4277
Course Duration:	4.5 days
Course Description:	Provides participants with practical information on the theory and operation of electric control devices and air-conditioning processes. These concepts are applied to typical two-position and/or modulating controls. Laboratory exercises provide hands-on experience. Various control systems are simulated, giving the participants opportunities to apply theories to practical applications.
Target Sector:	Commercial
Specific Area:	Buildings
Audience:	Technologists/Technicians, Operators, Maintenance Personnel

Control Systems

HONEYWELL (ONTARIO)

EFFECTIVE PNEUMATIC CONTROLS

Address: 740 Ellesmere Road ON15-03M, Scarborough, ON M1P 2V9

Phone: (416) 293-8111

Fax: (416) 297-4277

Course Duration: 4.5 days

Course Description: Information on the theory and basic operation of pneumatic thermostats, sensor-controllers, relays, dampers, valves and pneumatic actuators. Includes preventive maintenance, laboratory exercises, simulation of various control systems. Also offered in French.

Target Sector: Commercial

Specific Area: Buildings

Audience: Technologists/Technicians, Operators, Maintenance Personnel

JOHNSON CONTROLS INSTITUTE

ELECTRONIC SYSTEMS

Address: 507 East Michigan Street, Milwaukee, WI 53202

Phone: (414) 274-4286

Fax: (414) 274-4274

Course Duration: 1 week

Course Description: Operators, operations, database engineering, programming, energy management, UPL engineering and others.

Target Sector: Industrial, Commercial

Specific Area: Electrical/Electronics

Audience: Managers, Maintenance Personnel, Operators

Control Systems

HUMBER COLLEGE

ENERGY MANAGEMENT CONTROLS

Address:	205 Humber College Boulevard, P.O. Box 1900, Etobicoke, ON M9W 5L7
Phone:	(416) 675-5000
Fax:	(416) 675-6681
Course Duration:	45 hours
Course Description:	Course covers the methods of achieving energy conservation by way of control systems. Different manufacturers' systems will be introduced and discussed.
Target Sector:	Industrial, Commercial
Specific Area:	Buildings
Audience:	Managers, Technologists/Technicians, Engineers

JOHNSON CONTROLS INSTITUTE

HVAC SYSTEMS

Address:	507 East Michigan Street, Milwaukee, WI 53202
Phone:	(414) 274-4286
Fax:	(414) 274-4274
Course Duration:	1 week
Course Description:	Air-conditioning mechanical systems, air-conditioning controls, maintenance supervisors, advanced air-conditioning controls, variable air volume control.
Target Sector:	Industrial, Commercial
Specific Area:	Buildings
Audience:	Managers, Operators, Maintenance Personnel

Control Systems

CMA CHALIFOUR, MARCOTTE & ASSOCIÉS INC.

IMPROVEMENTS-CENTRAL CONTROL

Address: 755, boulevard St-Jean, Bureau 300, Pointe-Claire, PQ H9R 5M9

Phone: (514) 694-4141

Fax: (514) 694-1713

Course Duration: 1 day

Course Description: How to take full advantage of a central control. Improving control sequence. Preparing reference documents on the system operations. How to track down function flaws and correct them.

Target Sector: Industrial, Commercial, Institutional

Specific Area: Buildings

Audience: Engineers, Technologists/Technicians, Maintenance Personnel

HONEYWELL (ONTARIO)

LINE VOLTAGE TEMPERATURE CONTROLS

Address: 740 Ellesmere Road ON15-03M, Scarborough, ON M1P 2V9

Phone: (416) 293-8111

Fax: (416) 297-4277

Course Duration: 8 hours

Course Description: Temperature control theory behind electric baseboard heating. The range of Honeywell controls available to the industry. The precision and accuracy capabilities together with energy savings associated with the various Honeywell controls.

Target Sector: Commercial

Specific Area: Electrical/Electronics

Audience: Managers, Other

Control Systems

HONEYWELL (ONTARIO)

PNEUMATIC CONTROLS-SENSORS/CONTROLLERS

Address:	740 Ellesmere Road, ON15-03M, Scarborough, ON M1P 2V9
Phone:	(416) 293-8111
Fax:	(416) 297-4277
Course Duration:	2 days
Course Description:	Similar to Effective Pneumatic Controls but focusing on sensors and receiver-controllers.
Target Sector:	Commercial
Specific Area:	Buildings
Audience:	Technologists/Technicians, Operators, Maintenance Personnel

Electric Motors

E SOURCE, INC.

DRIVEPOWER SEMINAR

Address: 103 Walnut Street, 2nd floor, Boulder, CO 80302

Phone: (303) 440-8500

Fax: (303) 440-8502

Course Duration: 6-8 hours

Course Description: Workshop develops an integrated systems approach to drivepower, beginning with the characteristics of the load, and moves sequentially through opportunities in the drivetrain, motor, controls, and maintenance. Key aspects of the motor market are explored, along with the opportunities they present for DSM programs.

Target Sector: Industrial, Commercial

Specific Area: General

Audience: Technologists/Technicians, Managers, Engineers

E SOURCE, INC.

INDUSTRIAL DRIVEPOWER

Address: 103 Walnut Street, 2nd floor, Boulder, CO 80302

Phone: (303) 440-8500

Fax: (303) 440-8502

Course Duration: 1 day

Course Description: Topics covered are systems approach to drive, adjustable speed-control alternative, variable frequency inverters, installation case study, customer considerations, motor and drive compatibility, energy maintenance and productivity.

Target Sector: Industrial

Specific Area: General

Audience: Technologists/Technicians, Engineers

Electric Motors

ASSOCIATION OF ENERGY ENGINEERS

MOTOR APPLICATION/EFFICIENCY IMPROVEMENT

Address: P.O. Box 1026, Lilburn, GA 30226

Phone: (404) 925-9633

Fax: (404) 381-9865

Course Duration: 1 day

Course Description: Course provides practical, ready-to-apply information that will enable participants to select motors that will operate with maximum efficiency. Emphasis is placed on methods for determining and eliminating the causes of poor motor performance. Includes how to develop and implement an overall program to upgrade motor performance.

Target Sector: Industrial, Commercial, Institutional, Government

Specific Area: Buildings

Audience: Managers, Engineers, Operators

ASSOCIATION OF ENERGY ENGINEERS

VARIABLE SPEED DRIVES

Address: P.O. Box 1026, Lilburn, GA 30226

Phone: (404) 925-9633

Fax: (404) 381-9865

Course Duration: 1 day

Course Description: Looks at how to identify potential applications and apply the latest equipment available in a cost-effective manner. Examines the feasibility of a variable speed drive project, how such a project may impact on electrical, mechanical, process and instrumentation design, and when variable speed drives should be specified instead of control valves.

Target Sector: Industrial, Commercial, Institutional, Government

Specific Area: Buildings

Audience: Managers, Engineers, Operators

Electrical

MARLIN WESTWOOD TRAINING

CONSERVING ENERGY IN ELECTRICAL SYSTEMS

Address: 211 Watline Avenue, Mississauga, ON L4Z 1P3

Phone: (905) 890-1500

Fax: (905) 890-6550

Course Duration: 5 lessons

Course Description: This 10-hour unit identifies the electrical energy consumers in typical commercial and industrial facilities. Investigates utility rate structures and relates cost to lead management. Examines power factors, including how they are calculated and how they affect energy usage. Shows methods of conducting lighting surveys and how lighting fixture and lamp selection can impact electricity costs.

Target Sector: Industrial, Commercial

Specific Area: Buildings

Audience: Managers, Engineers, Architects

BUILDING OWNERS MANAGEMENT INSTITUTE (BOMI)

ELECTRICAL SYSTEMS & ILLUMINATION (1113)

Address: 885 Don Mills Road, Suite 106, Don Mills, ON M3C 1V9

Phone: (416) 443-8790

Fax: (416) 443-9970

Course Duration: 4 months

Course Description: Reviews the components of electrical systems and explains how to measure the electricity buildings consume. Covers maintaining electric motors and lighting fixtures. Also available in self-study.

Target Sector: Commercial, Hospitality, Government, Retail

Specific Area: Buildings

Audience: Managers, Technologists/Technicians, Operators

Energy Accounting, Financial Analysis

ASSOCIATION OF ENERGY ENGINEERS

ENERGY ACCOUNTING

Address: P.O. Box 1026, Lilburn, GA 30226

Phone: (404) 925-9633

Fax: (404) 381-9865

Course Duration: 2 days

Course Description: Provides the tools to reduce energy costs and document progress toward energy management goals. From fundamental concepts of energy use through readily applicable methods to organize, analyze, summarize and present energy use and cost data. A variety of energy accounting/estimating software tools will be reviewed and spreadsheet-based energy accounting software will be provided to each participant.

Target Sector: Industrial, Commercial, Institutional, Government

Specific Area: Buildings

Audience: Managers, Engineers, Operators

MUNICIPAL ELECTRICAL ASSOCIATION

ENERGY MANAGEMENT WORKSHOP

Address: 20 Eglinton Avenue West, P.O. Box 2004, Suite 500, Toronto, ON M4R 1K8

Phone: (416) 483-7739

Fax: (416) 483-9039

Course Duration: 1.5 days

Course Description: Topics: Value of energy management to customers, utilities, society and environment. Cost/benefit analysis. Financial assessment, impact on utilities. Energy demand evaluation, billing analysis. Motors, fans and pumps. Load control technologies. Lighting design and application. Energy audit procedure and reporting. Utility design program. Coordination with allies. Focus group discussion.

Target Sector: Commercial, Industrial

Specific Area: Buildings

Audience: Managers, Other

Energy Accounting, Financial Analysis

ASSOCIATION OF ENERGY ENGINEERS

SLASHING UTILITY COSTS

Address: P.O. Box 1026, Lilburn, GA 30226

Phone: (404) 925-9633

Fax: (404) 381-9865

Course Duration: 2 days

Course Description: Looks at low-cost or cost options which can be used to substantially reduce utility bills without reducing energy usage. How to analyze a utility bill for savings opportunities. Learn how to lower peak power-demand charges, how to negotiate a contract that will assure a reliable supply of natural gas at a rate which is probably much lower than what you are paying now. Topics: electricity - cogeneration - natural gas - water and sewer - utility consultation.

Target Sector: Industrial, Commercial, Institutional, Government

Specific Area: Buildings

Audience: Managers, Engineers, Operators

UNIVERSITÉ DU QUÉBEC À CHICOUTIMI

SYSTEMS APPLIED TO HYDRAULIC RESOURCES

Address: 555, boulevard de l'Université, Chicoutimi, PQ G7H 2B1

Phone: (418) 545-5011

Fax: (418) 545-5012

Course Duration: 45 hours

Course Description: Problems of usage and emphasis on hydraulic resources from the point of view of the systems. The objectives of hydraulic development. Economic and technological production concepts. Hydrological aspects. Economic factors affecting system design. Methods and techniques. Simple model of a system of rivers, reservoirs. Mathematical models, probabilities, etc.

Target Sector: Industrial

Specific Area: General

Audience: Engineers

Energy Auditing

ASSOCIATION OF ENERGY ENGINEERS

ASEAM: BUILDING ENERGY SIMULATION

Address: P.O. Box 1026, Lilburn, GA 30226

Phone: (404) 925-9633

Fax: (404) 381-9865

Course Duration: 2 days

Course Description: Designed to familiarize participants with ASEAM (A Simplified Energy Analysis Method) computer program, which can be used to estimate energy use in buildings, and to project energy and life-cycle cost savings from specific energy conservation measures. Begins with an overview of building simulation techniques and programs, and moves quickly into thorough coverage of how to use the ASEAM program to simulate building energy use and to estimate savings associated with energy conservation opportunities identified in an energy audit. Includes case studies.

Target Sector: Commercial, Institutional, Government

Specific Area: Buildings

Audience: Managers, Engineers, Technologists/Technicians

SANDWELL INC.

CUSTOMIZED TRAINING

Address: 620 René Lévesque Boulevard Ouest, Montréal, PQ H3B 4V8

Phone: (514) 866-1221

Fax: (514) 866-0804

Course Duration: varies

Course Description: How to conduct energy audits. Some seminars are delivered with other trainers from industry and Hydro-Québec. Training is customized to individual client needs.

Target Sector: Industrial

Specific Area: Pulp & Paper

Audience: Managers, Engineers, Technologists/Technicians

Energy Auditing

CIET INC.

ELEC ENERGY MANAGEMENT OPPORTUNITIES

Address:	P.O. Box 385, Station A, 2000 Simcoe Street N, Oshawa, ON L1H 7L7
Phone:	(905) 721-3050
Fax:	(905) 721-3059
Toll-Free:	1-800-461-7618
Course Duration:	2 days
Course Description:	This CEMET course provides background, guidance, worksheets and computer software to assist in the implementation of energy management strategies. On-site observations and measurements of electricity consumption at the participants' facilities, and practical demonstrations provide a realistic basis for instruction in energy auditing principles.
Target Sector:	Commercial, Government, Industrial, Institutional
Specific Area:	General
Audience:	Managers, Operators, Other

UNIVERSITY OF TORONTO

ENERGY AUDITING

Address:	35 St. George Street, Faculty of Engineering, Toronto, ON M5S 1A4
Phone:	(416) 978-3119
Fax:	(416) 978-4859
Course Duration:	8 sessions
Course Description:	This course provides detailed energy auditing equipment, testing and monitoring equipment descriptions, building-system inspection and cost-avoidance analysis procedures, and reporting and implementation programming direction. Topics: detailed rate structure analysis - energy auditing principles and methods - HVAC, electrical systems, plumbing systems and utility metering systems - self-evaluation check lists - handy working aids - implementation programming and marketing strategies.
Target Sector:	Industrial, Commercial
Specific Area:	Buildings
Audience:	Managers, Engineers, Operators

Energy Auditing

CIET INC.
ENERGY AUDITING

Address:	P.O. Box 385, Station A, 2000 Simcoe Street N, Oshawa, ON L1H 7L7
Phone:	(905) 721-3050
Fax:	(905) 721-3059
Toll-Free:	1-800-461-7618
Course Duration:	2 days
Course Description:	This CEMET course introduces the concepts of energy auditing as part of an energy management program, explains the steps in conducting an energy audit, and demonstrates the benefits of an audit. Details on audit planning, kinds of data required, methods of collecting and analyzing data, are discussed. Topics: Keys to a Successful Energy Management Program - Introduction to Energy Auditing - Energy Management Program - Data Collection - Preliminary Data Analysis - Survey Planning - The Walk-Through Audit - The Diagnostic Audit - Detailed Analysis and Evaluation of Energy Management Opportunities - Portable Test Instruments - Environment Impact of Energy Management Projects - Financial Analysis - Workshop Session #1 - Boiler System Audit - Workshop Session #2 - Industrial Ventilation Audit.
Target Sector:	Commercial, Institutional, Hospitality, Industrial
Specific Area:	General
Audience:	Maintenance Personnel, Managers, Operators

ASSOCIATION OF ENERGY ENGINEERS
ENERGY AUDITING

Address:	P.O. Box 1026, Lilburn, GA 30226
Phone:	(404) 925-9633
Fax:	(404) 381-9865
Course Duration:	2 days
Course Description:	Designed to provide the knowledge needed to identify where energy consumption can be reduced, and utilize the latest methods and technologies to accomplish real savings. Special emphasis on calculation methods and practical examples to help evaluate feasibility of wide variety of conservation measures.
Target Sector:	Industrial, Commercial, Institutional, Government
Specific Area:	Buildings
Audience:	Managers, Engineers, Technologists/Technicians

Energy Auditing

FANSHAWE COLLEGE

ENERGY MANAGEMENT

Address: 1460 Oxford Street, P.O. Box 4005, London, ON N5W 5H1

Phone: (519) 452-4100

Fax: (519) 659-5781

Course Duration: 45 hours

Course Description: The four energy audits are studied with the aid of examples and assignments. Payback analysis; obsolescence probability; insulation, combustion and process energy balances are covered. Energy management (peak demands, load shedding, power factor and load factors) is studied using working examples. A field assignment of energy analysis of a plant or institution forms part of the course.

Target Sector: Industrial, Commercial

Specific Area: Buildings

Audience: Technologists/Technicians, Managers

ENVIRONMENTAL SERVICES ASSOCIATION OF ALBERTA

ENVIRONMENTAL AUDITING I

Address: #250, 10508-82nd Street, Edmonton, AB T6E 2A4

Phone: (403) 439-6363

Fax: (403) 439-4249

Course Duration: 2 days

Course Description: Participants will acquire the necessary skills to perform successful environmental audits. The principles of environmental auditing, the techniques required for the audit, and the peculiarities of various audits are covered. Topics: setting up an environmental audit program - the auditing process - pre-audit preparation - on-site activities - reporting audit results - audit response and follow up - quality assurance and special audits.

Target Sector: Industrial, Institutional, Commercial, Government

Specific Area: General

Audience: Technologists/Technicians, Engineers, Operators

Energy Auditing

ENVIRONMENTAL SERVICES ASSOCIATION OF ALBERTA

ENVIRONMENTAL AUDITING II

Address: #250, 10508-82nd Street, Edmonton, AB T6E 2A4

Phone: (403) 439-6363

Fax: (403) 439-4249

Course Duration: 2 days

Course Description: Designed for the professional with practical, in-the-field auditing experience. It is presented with an emphasis on the management auditing approach. This is the approach that is being promoted internationally through the ISO 1400 effort and by other professional organizations. This course reviews the history and evolution of environmental auditing and covers audit skills that are key to successful, effective management audits that will be of value to clients. Topics: audit skills - management and operation skills such as managing the audit - audit skills application, such as facilities and programs.

Target Sector: Industrial, Institutional, Commercial, Government

Specific Area: General

Audience: Engineers, Operators, Technologists/Technicians

CSTEC

ENVIRONMENT/ENERGY CONSERVATION AUDITS

Address: 234 Eglinton Avenue East, Toronto, ON M4P 1K7

Phone: (416) 480-1797

Fax: (416) 480-2986

Course Duration: 3 days

Course Description: Currently under development by Jay Cowan, Enviro-Fit Inc. (204-452-5746), the intent of this training will be to provide employees, both union and management, with the skills to participate in joint environment and energy conservation audits and activities. Primarily intended for steel sector employees, the course will be available to others upon request.

Target Sector: Industrial

Specific Area: Primary Metals

Audience: Engineers, Technologists/Technicians, Maintenance Personnel

Energy Auditing

NEWFOUNDLAND POWER

INTRODUCTION TO DEMAND-SIDE MANAGEMENT (DSM)

Address: 55 Kenmount Road, P.O. Box 8910, St. John's, NF A1B 3P6

Phone: (709) 737-2925

Fax: (709) 737-2882

Course Duration: 3 hours

Course Description: Course provides an overview of the company's DSM goals, discusses the use of DSM as a marketing tool, and discusses key market areas for the company, especially electric space heating. Current DSM programs offered to customers are also discussed.

Target Sector: Commercial

Specific Area: Buildings

Audience: Other

ST. CLAIR COLLEGE

PRINCIPLES OF ENERGY MANAGEMENT

Address: 1001 Grand Avenue West (Thames Campus), Chatham, ON N7M 5W4

Phone: (519) 354-9100, extension 255

Fax: (519) 354-5496

Course Duration: 45 hours

Course Description: The course covers energy rates, utility meters, energy audits, energy conservation measurement techniques including data logging, electronic control instrumentation, reviewing designs and retrofitting.

Target Sector: Industrial, Commercial

Specific Area: Buildings

Audience: Technologists/Technicians, Managers, Maintenance Personnel

Energy Auditing

ASHRAE

ENERGY-EFFICIENT BUILDINGS

Address:	1791 Tullie Circle North East, Atlanta, GA 30329
Phone:	(404) 636-8400
Fax:	(404) 321-5478
Course Duration:	2 days
Course Description:	Course teaches how to comply with the efficiency requirements of ASHRAE's energy standard. Seminar stresses practical application of the standard by using LTGSTD and EVNSTD computer programs to perform sample energy analyses of commercial buildings and provides a quick, effective way to learn how to comply with modern energy efficiency regulations.
Target Sector:	Industrial, Commercial
Specific Area:	Buildings
Audience:	Technologists/Technicians, Managers, Engineers

Energy (General)

BUREAU D'ÉTUDES ZARIFFA INC.

ABC'S OF ENERGY-EFFICIENCY INTERVENTION

Address:	370, rue Beausoleil, La Prairie, PQ J5R 4Y8
Phone:	(514) 444-7962
Fax:	(514) 444-7962
Course Duration:	2 days
Course Description:	The evolution of intervention techniques in energy efficiency. Description of the different parameters, obstacles, characteristics, roles, etc. Lessons learned. Advice on future strategies. Programming for rational use of energy. Techniques and ideas for evaluation of energy efficiency programs.
Target Sector:	Industrial, Commercial
Specific Area:	General
Audience:	Engineers, Architects

CANADIAN INSTITUTE OF MINING, METALLURGY AND PETROLEUM

ANNUAL CONFERENCE

Address:	3400 De Maisonneuve Boulevard West, Xerox Tower, Suite 1210, Montréal, PQ H3Z 3B8
Phone:	(514) 939-2710
Fax:	(514) 939-2714
Course Duration:	varies
Course Description:	An energy efficiency workshop is included as part of the annual conference held each May.
Target Sector:	Industrial
Specific Area:	Petroleum Refining
Audience:	Managers, Engineers, Technologists/Technicians

Energy (General)

AGGREGATE PRODUCERS' ASSOCIATION OF ONTARIO

ANNUAL OPERATIONS CONFERENCE

Address: #2, 365 Brunel Road, Mississauga, ON L4Z 1Z5

Phone: (905) 507-0711

Fax: (905) 507-0717

Course Duration: 2 days

Course Description: As part of the annual conference held every January, seminars are included on fuel conservation/energy efficiency - these are approximately one hour in length.

Target Sector: Industrial

Specific Area: Mining

Audience: Managers, Technologists/Technicians, Engineers

SENECA COLLEGE

CANADA'S ENERGY PROBLEMS

Address: 16775 Yonge Street, Suite 217, Newmarket, ON L3Y 8J4

Phone: (905) 727-8577

Fax: (905) 898-7014

Course Duration:

Course Description: The numerous alternatives facing Canada today are surveyed with emphasis placed on Canada's current policy in relation to the world energy outlook. This survey includes a discussion of the physical and socio-economic aspects of Canada's energy problems.

Target Sector: General

Specific Area: General

Audience: Other

Energy (General)

POWER SMART INC.

COMMERCIAL SECTOR DEMAND-SIDE MANAGEMENT

Address: 475 West Georgia, Suite 520, Vancouver, BC V6B 4M9

Phone: (604) 688-4637

Fax: (604) 688-7342

Course Duration: 4 days

Course Description: Lectures and demonstrations dealing with the characteristics, goals, objectives and perspectives of the commercial sector customer. Review of the utility's economic and technical constraints, and rationale for Demand Side Management and customer service. Construction processes and building equipment and systems at the end-use level. Comparison of baseline and energy-efficient technologies. Energy auditing fundamentals. Field audit demonstrations using demand profile analysis techniques.

Target Sector: Commercial

Specific Area: General

Audience: Managers, Technologists/Technicians

POWER SMART INC.

CUSTOMER END-USE DATA COLLECTION

Address: 475 West Georgia, Suite 520, Vancouver, BC V6B 4M9

Phone: (604) 688-4637

Fax: (604) 688-7342

Course Duration: 2 days

Course Description: Principles of DSM from the customer load perspective. Methods of segmenting the sectors' typical end-uses, basic energy accounting, statistical significance, data sources, end-use intensities and data collection methods. Baseline technologies, energy-efficient technologies and product profiles. Review of use and design of surveys, questionnaires and date verification from the cost, time and accuracy perspectives. Use of software and databases is discussed.

Target Sector: Industrial, Commercial

Specific Area: General

Audience: Managers, Technologists/Technicians, Engineers

Energy (General)

MAUNDER BRITNELL INC.

CUSTOMIZED TRAINING

Address:	500 Cochrane Drive, Unit A, Markham, ON L3R 8E2
Phone:	(905) 474-0816
Fax:	(905) 474-0137
Course Duration:	varies
Course Description:	Customized training is offered in the areas of Energy Management and the Environment – how to establish an energy management program, conduct an energy audit, identify and evaluate energy saving opportunities, and to prioritize, implement and monitor results of energy projects. The positive environmental impact of these projects are also evaluated. Technology Transfer – advanced approaches to controlling utility costs such as monitoring and targeting, as well as technologies relating to plant utilities, building services, heat recovery, lighting, refrigeration, cogeneration, electrical services, and power generation and distribution. Operations and Maintenance – at the commissioning stage to ensure efficient ongoing operation of the equipment and systems involved.
Target Sector:	Industrial, Commercial, Institutional
Specific Area:	General
Audience:	Managers, Technologists/Technicians, Engineers

ENVIRONMENTAL DESIGN COMPANY

CUSTOMIZED TRAINING

Address:	15 Forest Ridge Drive, Toronto, ON M6B 1H2
Phone:	(416) 789-9483
Fax:	(416) 789-1498
Course Duration:	varies
Course Description:	Environmental courses deal with energy conservation, waste minimization, and indoor air. Quality building-related courses cover heating, ventilating and air conditioning.
Target Sector:	Industrial, Commercial, Institutional
Specific Area:	General
Audience:	Other

Energy (General)

SOLOMON ASSOCIATES

CUSTOMIZED TRAINING

Address:	10670 North Central Expressway, Dallas, TX 75231
Phone:	(214) 696-2766
Fax:	(214) 739-1137
Course Duration:	varies
Course Description:	Customized training specializes in competitive practices, with a focus on operating costs, including energy management, maintenance, human resources and overall yields. Will perform multi-client studies (at a cost of approximately $10,000/plant); individual client performance improvement studies have ranged in cost between $20,000 and $200,000.
Target Sector:	Industrial
Specific Area:	Petroleum Refining
Audience:	Managers, Engineers, Operators

TRANSALTA UTILITIES CORPORATION

DESTINATION CONSERVATION

Address:	110-12 Avenue South West, PBS-6, P.O. Box 1900, Calgary, AB T2P 2M1
Phone:	(403) 267-7383
Fax:	(403) 267-2111
Course Duration:	2 hours
Course Description:	Offered in conjunction with Edmonton's Environmental Resource Centre, Destination Conservation is a comprehensive environmental lifestyle, curriculum and building upgrade program for school jurisdictions. Regular in-house services provide training/meeting opportunities for students, teachers, administrators and maintenance personnel to discuss conservation campaigns and clubs, curriculum integration, energy audits, activity reporting, and savings monitoring.
Target Sector:	Commercial
Specific Area:	Buildings
Audience:	Managers, Operators, Maintenance Personnel

Energy (General)

DEMAND-SIDE MANAGEMENT TRAINING INSTITUTE

DSM: PRINCIPLES AND APPLICATION

Address:	45 E. City Line Avenue, Suite 514, Bala Cynwyd, PA 19004
Phone:	(610) 667-3350
Fax:	(610) 667-3346
Course Duration:	5 days
Course Description:	Intensive seminar covers all aspects of DSM including market research, market penetration, pricing options, energy-efficient technologies, program implementation, program evaluation, monitoring and tracking systems, and emerging issues.
Target Sector:	Industrial, Commercial
Specific Area:	General
Audience:	Managers, Technologists/Technicians, Engineers

UNIVERSITY OF OTTAWA

ECONOMICS OF ENERGY/NATURAL RESOURCES

Address:	550 Cumberland Street, Ottawa, ON K1N 6N5
Phone:	(613) 562-5781
Fax:	(613) 562-5105
Course Duration:	14 weeks
Course Description:	Prerequisites: ECO 1102 Intro to Macroeconomics ECO 1104 Intro to Microeconomics Topics: principles of ecology - energy economics - rate of utilization of natural resources & the environment - need for institutional solutions - problems specific to each type of resource - institutional aspects - Canadian policies relating to energy/natural resources.
Target Sector:	Commercial, Industrial, Institutional
Specific Area:	General
Audience:	Other

Energy (General)

CENTENNIAL COLLEGE

ENERGY AND MAN

Address: 41 Progress Court, P.O. Box 631, Station A, Scarborough, ON M1K 5E9

Phone: (416) 694-3241

Fax: (416) 694-2664

Toll-Free: 1-800-268-4419

Course Duration:

Course Description: This is an energy conservation course for individuals concerned with the current energy crisis. The course will examine several alternate energy systems with preference to the current state of technology and economic possibilities. Related demonstrations and basic experiments will be done to provide hands-on experience with specific systems.

Target Sector: General

Specific Area: General

Audience: Other

GRANTON INSTITUTE OF TECHNOLOGY

ENERGY-EFFICIENT CONSTRUCTION TECHNOLOGY

Address: 263 Adelaide Street West, Toronto, ON M5H 1Y3

Phone: (416) 977-3929

Fax: (416) 977-5612

Toll-Free: 1-800-268-1121

Course Duration: Distance Education

Course Description: This 78-lesson course includes 64 assignments and prepares you for a career as an energy technician. Topics: practical mathematics - architectural blueprint reading - residential and light commercial construction - general construction - building and construction materials - solar technology - building science for a cold climate.

Target Sector: Industrial, Commercial, Institutional

Specific Area: General

Audience: Other, Technologists/Technicians

Energy (General)

ST. LAWRENCE COLLEGE

ENERGY MANAGEMENT

Address: 2288 Parkedale Avenue, Brockville, ON K6V 5X3

Phone: (613) 544-5400, extension 1220

Fax: (613) 545-3920

Course Duration: 30 hours

Course Description: To conserve energy, its use must be managed. Modern control processes now do this. The building manager must, therefore, be familiar with the concepts of the building envelope and how heating, cooling, electrical and lighting systems interact to consume energy. Heat reclamation and solar energy concepts are also discussed.

Target Sector: Industrial, Commercial

Specific Area: Buildings

Audience: Managers

ST. CLAIR COLLEGE

ENERGY MANAGEMENT

Address: 1001 Grand Avenue West (Thames Campus), Chatham, ON N7M 5W4

Phone: (519) 354-9100, extension 255

Fax: (519) 354-5496

Course Duration: 45 hours

Course Description: This course explains why an energy problem exists, describes its impact on the hospitality operations, and provides a practical approach to the development and implementation of an energy management program.

Target Sector: Commercial

Specific Area: General

Audience: Managers

Energy (General)

UNIVERSITY OF TORONTO

ENERGY MANAGEMENT

Address: 35 St. George Street, Faculty of Engineering, Toronto, ON M5S 1A4

Phone: (416) 978-3119

Fax: (416) 978-4859

Course Duration: 35 hours

Course Description: Overview of energy management and specifics on energy accounting, utility rate structures, energy management opportunities, cost impact of measures, organizational structuring and reporting. Topics: energy accounting principles and systems - rate-structure analysis - utility rate-structure impact on decision making - financial and general managers' roles in energy management - energy management - marketing and packaging.

Target Sector: Industrial, Commercial

Specific Area: Buildings

Audience: Managers, Technologists/Technicians, Engineers

NATURAL RESOURCES CANADA

ENERGY MANAGEMENT SERIES

Address: 580 Booth Street, Ottawa, ON K1A 0E4

Phone: (613) 995-0947

Fax: (613) 996-9094

Course Duration: varies

Course Description: Energy management/employee participation, conducting an energy audit, financial analysis, energy accounting, waste heat recovery, process insulation, lighting, electrical, energy-efficient electric motors, combustion, boiler plant systems, thermal storage, steam and condensation systems, heating and cooling equipment (steam and water), heating, ventilating and air-conditioning, refrigeration and heat pumps, water and compressed air systems, fans and pumps, compressors and turbines.

Target Sector: Industrial, Commercial

Specific Area: Buildings

Audience: Managers, Technologists/Technicians, Maintenance Personnel

Energy (General)

SASKATCHEWAN ENERGY CONSERVATION/DEVELOPMENT

ENERGY MANAGEMENT TRAINING

Address: 15 Innovation Boulevard, Suite 109, Saskatoon, SK S7N 2X8

Phone: (306) 933-5616

Fax: (306) 933-5310

Course Duration: varies

Course Description: Energy options analysis. Energy technology screening and evaluation. IRP principles and methodology. Energy market research. Business development in new products. Monitoring and evaluation of energy management programs.

Target Sector: Industrial, Commercial

Specific Area: General

Audience: Managers, Technologists/Technicians, Maintenance Personnel

BUILDING OWNERS MANAGEMENT INSTITUTE (BOMI)

ENERGY MANAGEMENT (1121)

Address: 885 Don Mills Road, Suite 106, Don Mills, ON M3C 1V9

Phone: (416) 443-8790

Fax: (416) 443-9970

Course Duration: 4 months

Course Description: Course explains energy management strategies for HVAC, electrical and lighting systems. Describes how alternative energy systems that use energy from the sun and earth may be more efficient, cost-effective and environmentally safer than traditional systems. Course concludes by detailing how to develop a facilities energy management program. Also available in self-study.

Target Sector: Commercial, Hospitality, Government, Retail

Specific Area: Buildings

Audience: Managers, Technologists/Technicians, Engineers

Energy (General)

SAULT COLLEGE

ENERGY MANAGEMENT - NORTHERN CLIMATES

Address:	443 Northern Avenue, P.O. Box 60, Sault Ste. Marie, ON P6A 5L3
Phone:	(705) 856-2347
Fax:	(705) 856-2701
Course Duration:	
Course Description:	Participant will develop and implement an effective energy management program. They will identify critical needs and barriers, develop solutions, and incorporate strategic planning, including cost-effective energy conservation measures, and compare and choose sources of energy audits.
Target Sector:	Industrial, Institutional, Commercial, Government
Specific Area:	General
Audience:	Other

ST. CLAIR COLLEGE

ENERGY MANAGEMENT-MECHANICAL ENGINEERING

Address:	1001 Grand Avenue West (Thames Campus), Chatham, ON N7M 5W4
Phone:	(519) 354-9100, extension 255
Fax:	(519) 354-5496
Course Duration:	3 years
Course Description:	Plant operation and maintenance, technical sales, energy-use analysis and management, building HVAC systems design, mechanical contracting and energy utilities.
Target Sector:	Industrial, Commercial
Specific Area:	Buildings
Audience:	Technologists/Technicians, Managers, Maintenance Personnel

Energy (General)

TECHNICAL UNIVERSITY OF NOVA SCOTIA

ENERGY-RELATED SEMINARS/COURSES

Address: P.O. Box 1000, Halifax, NS B3J 2X4

Phone: (902) 420-7524

Fax: (902) 423-9859

Course Duration: 2 days

Course Description: Various in-depth seminars and courses which include application and theory. Available in cities across Canada, as well as at the Continuing Education Centre, Halifax, NS, and as in-house training. Some of the courses and seminars include the following: Fundamentals of Energy Management - Energy Management for Industrial Plants - Metering of Electrical Energy and Demand - Energy-Efficient Drives and Power Supplies - Energy Management for Buildings - Energy Performance Contracting - Earth-Energy Heat Pumps - Designing Energy Efficiency into Buildings - Combustible Waste & Energy

Target Sector: Industrial, Commercial, Institutional, Government

Specific Area: General

Audience: Other

ONTARIO ELECTRICAL LEAGUE

ENERGY SAVINGS SPECIALIST PROGRAM

Address: 2 Lansing Square, Suite 1000, North York, ON M2J 4P8

Phone: (416) 495-0052

Fax: (416) 495-1804

Course Duration: 3 days

Course Description: The Ontario Ministry of Skills Development has approved incentive funding for the program and will partially reimburse participants who successfully complete all portions of the program. Individuals need not apply for this incentive – all administration will be handled by the League. Course also available in evenings. Topics: learn to spot opportunities for energy management initiatives in a customer's building - calculate the potential energy savings associated with selected energy management initiatives - calculate the economic benefits associated with selected energy management initiatives - match customer's needs with Ontario Hydro's Energy Management Programs - estimate the simple payback for energy management initiatives, considering project costs, applicable incentives and reduced operating costs - prepare and use a proposal to convince the customer to proceed with the energy management initiative.

Target Sector: General

Specific Area: Electrical/Electronics

Audience: Other

Energy (General)

UNIVERSITY OF REGINA

ENERGY SYSTEMS

Address: Industrial Systems Engineering, Faculty of Engineering, Regina, SK S4S 0A2

Phone: (306) 585-4364

Fax: (306) 585-4855

Course Duration: 36 hours

Course Description: Technical, economic and human dimensional aspects of energy systems (renewable energy, coal, oil, gas, nuclear, rational use of energy, energy conservation, geopolitical aspects) including supply, demand, environmental impact and assessment, safety loss and prevention.

Target Sector: Industrial, Commercial

Specific Area: General

Audience: Engineers

MARLIN WESTWOOD TRAINING

EXAMINING ENERGY CONSERVATION BASICS

Address: 211 Watline Avenue, Mississauga, ON L4Z 1P3

Phone: (905) 890-1500

Fax: (905) 890-6550

Course Duration: 10 hours

Course Description: Energy sources and the history of energy usage are discussed, alternative energy sources and their feasibility are examined, and current energy usage patterns and places where energy can be conserved are identified. How to recognize energy waste and sample corrective actions and how to conduct an energy audit are explained. Can be purchased as a self-learning or instructor-led package. Topics: Energy and Its Sources - Why the Energy Crisis? - Energy Consumption and Loss - Practical Conservation Measures - Conducting an Energy Audit.

Target Sector: Industrial, Commercial, Institutional

Specific Area: General

Audience: Managers

Energy (General)

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

FACILITIES MANAGEMENT APPRENTICESHIP

Address:	2250 Riverside Drive, Sir Charles Tupper Bldg, Ottawa, ON K1A 0M2
Phone:	(613) 736-2257
Fax:	(613) 998-8360
Course Duration:	8000 hours
Course Description:	The training takes four years during which the apprentice is on probation. The time is broken down into related theory of 900 hours at Algonquin College and 7100 hours on the job work experience in units such as safety accident prevention, bench work, trades tools, measuring/test equipment, mechanical equipment and lubrication, heating and plumbing systems/equipment, refrigeration and air-conditioning systems/equipment.
Target Sector:	Industrial, Commercial
Specific Area:	Buildings
Audience:	Operators, Managers, Maintenance Personnel

BUILDING OWNERS MANAGEMENT INSTITUTE (BOMI)

FACILITIES PLANNING/PROJECT MANAGEMENT

Address:	885 Don Mills Road, Suite 106, Don Mills, ON M3C 1V9
Phone:	(416) 443-8790
Fax:	(416) 443-9970
Course Duration:	4 months
Course Description:	An in-depth study of the skills needed to manage a project from start to finish. Topics: identifying and rating user needs - classifying facility projects - design development and design review - implementing the project - creating a facility annual report for the future. Also available in self-study.
Target Sector:	Commercial, Hospitality, Government, Retail
Specific Area:	Buildings
Audience:	Managers, Technologists/Technicians, Engineers

Energy (General)

PETROLEUM SOCIETY OF CANADIAN MINING INSTITUTE

FORGING OUR FUTURE-INTEGRATING TECHNOLOGY

Address:	150 - 9th Avenue SW, Calgary, AB T2P 2S5
Phone:	(403) 290-2747
Fax:	(403) 290-2950
Course Duration:	4 days
Course Description:	Three sessions specific to energy efficiency issues. Operating Efficiently I, II and III. Topics: beam pump balancing based on motor power utilization - total well management - long-stroke pumping units - eliminating sucker rod couplings can reduce progressing cavity pump operating costs - innovative re-fracturing program - carbonated hydrocarbons - production optimization - indirect fired heaters - multiple horizontal drainholes.
Target Sector:	Industrial
Specific Area:	Petroleum Refining
Audience:	Managers, Engineers, Technologists/Technicians

ASSOCIATION OF ENERGY ENGINEERS

FUNDAMENTALS OF DEMAND-SIDE MANAGEMENT

Address:	P.O. Box 1026, Lilburn, GA 30226
Phone:	(404) 925-9633
Fax:	(404) 381-9865
Course Duration:	2 days
Course Description:	Covers all aspects of effective DSM planning, implementation and program management, including recovery mechanisms, market penetration strategies, procurement methods, and contracting practices being applied to DSM.
Target Sector:	Industrial, Commercial, Institutional, Government
Specific Area:	Buildings
Audience:	Managers, Engineers, Technologists/Technicians

Energy (General)

ASSOCIATION OF ENERGY ENGINEERS

FUNDAMENTALS OF ENERGY MANAGEMENT

Address: P.O. Box 1026, Lilburn, GA 30226

Phone: (404) 925-9633

Fax: (404) 381-9865

Course Duration: 2 days

Course Description: Provides a thorough review of the basics of efficiency improvement as it relates to electrical, utility building and combustion systems. Trends in fuel supply and pricing, energy audits, HVAC, generation, air and water distribution systems are covered.

Target Sector: Industrial, Commercial, Institutional, Government

Specific Area: Buildings

Audience: Managers, Engineers, Technologists/Technicians

ÉCOLE POLYTECHNIQUE

INDUSTRIAL APPLICATIONS: GAS TECHNOLOGY

Address: Institut de génie énergétique, C.P. 6079, Succursale A, Montréal, PQ H3C 3A7

Phone: (514) 340-4803

Fax: (514) 340-4192

Course Duration: 2 days

Course Description: By large industrial sectors and through concrete examples, the course will offer to participants a complete panorama of techniques available on the market, noting their strong and weak points. The course will also provide the necessary criteria for evaluation, both technical and economic, of the whole industrial process wherein gas plays a role.

Target Sector: Industrial

Specific Area: Buildings

Audience: Technologists/Technicians, Engineers, Managers

Energy (General)

ÉCOLE DE TECHNOLOGIE SUPÉRIEURE

INTEGRATE MAINTENANCE

Address: 4750, avenue Henri-Julien, Montréal, PQ H2T 2C8

Phone: (514) 289-8830

Fax: (514) 289-8968

Course Duration: 2 days

Course Description: Participants will be able to review the procedures of their maintenance service in order to integrate present programs into it and increase productivity.

Target Sector: Industrial

Specific Area: Buildings

Audience: Managers, Technologists/Technicians

ASSOCIATION OF ENERGY ENGINEERS

PERFORMANCE CONTRACTING

Address: P.O. Box 1026, Lilburn, GA 30226

Phone: (404) 925-9633

Fax: (404) 381-9865

Course Duration: 2 days

Course Description: Course provides an understanding of how deals are structured, how financing is obtained, and what specific provisions contracts should cover – from both the user's and the provider's points of view. Use of performance contracting for achieving environmental objectives will also be examined. Topics: performance contracting - BTU's - developing risk strategies - financing issues and options - project criteria - legal considerations, administration.

Target Sector: Industrial, Commercial, Institutional, Government

Specific Area: Buildings

Audience: Managers, Engineers, Operators

Energy (General)

CMA CHALIFOUR, MARCOTTE & ASSOCIÉS INC.

PLANNED MAINTENANCE SYSTEMS

Address:	755, boulevard St-Jean, Bureau 300, Pointe-Claire, PQ H9R 5M9
Phone:	(514) 694-4141
Fax:	(514) 694-1713
Course Duration:	3 days
Course Description:	Knowing how to institute a planned maintenance system into a structure. How to administrate this system effectively, knowing the various methods of structuring maintenance. Integrating planned maintenance concept with energy efficiency.
Target Sector:	Industrial, Commercial, Institutional
Specific Area:	Buildings
Audience:	Managers

MARITIME ELECTRIC COMPANY

POWER WISE OPPORTUNITIES GUIDEBOOK

Address:	P.O. Box 1328, Charlottetown, PE C1A 7N2
Phone:	(902) 566-1599
Fax:	(902) 629-3665
Course Duration:	varies
Course Description:	This manual is a complete training program specifically designed for any company interested in energy management. Includes computer software, introduction to demand-side management, electricity generation to end use, demand profile, load inventory, end-use breakdown, identifying savings opportunities, checklist of savings and examples of savings opportunities.
Target Sector:	Commercial, Industrial
Specific Area:	Buildings
Audience:	Technologists/Technicians, Managers, Other

Energy (General)

NIAGARA COLLEGE

PRINCIPLES OF ENERGY MANAGEMENT

Address:	Woodlawn Road, P.O. Box 1005, Welland, ON L3B 5S2
Phone:	(905) 735-2211, extension 7656
Fax:	(905) 735-0419
Course Duration:	45 hours
Course Description:	Energy management program design, energy reporting and accounting, including the calculation of variances, energy auditing, economic evaluation techniques, energy systems operation and maintenance, insulation practices, lighting systems, heating, ventilation, air-conditioning and computer-based data logging, diagnostic and control systems.
Target Sector:	Industrial, Commercial
Specific Area:	Buildings,
Audience:	Managers, Operators, Maintenance Personnel

NEWFOUNDLAND POWER

SPACE & WATER HEATING - SMART CHOICES

Address:	55 Kenmount Road, P.O. Box 8910, St. John's, NF A1B 3P6
Phone:	(709) 737-2925
Fax:	(709) 737-2882
Course Duration:	6 hours
Course Description:	Course reviews sales attitudes and techniques. It also provides an overview of various electric space heating systems.
Target Sector:	Commercial
Specific Area:	Buildings
Audience:	Operators, Maintenance Personnel

Energy (General)

ASSOCIATION OF ENERGY ENGINEERS

TRAINING FOR ENERGY MANAGERS

Address:	P.O. Box 1026, Lilburn, GA 30226
Phone:	(404) 925-9633
Fax:	(404) 381-9865
Course Duration:	5 days
Course Description:	Examines the technical, economic and regulatory aspects of effective energy management. Offers a comprehensive learning and problem-solving forum for those who want a broader understanding of the latest energy-cost reduction techniques and strategies.
Target Sector:	Industrial, Commercial, Institutional, Government
Specific Area:	Buildings
Audience:	Managers, Engineers, Technologists/Technicians

Fans, Pumps

CANADIAN INSTITUTE OF MINING, METALLURGY AND PETROLEUM

ENERGY REDUCTION MEASURES – FANS, PUMPS

Address: 3400 De Maisonneuve Boulevard West, Xerox Tower, Suite 1210, Montréal, PQ H3Z 3B8

Phone: (514) 939-2710

Fax: (514) 939-2714

Course Duration: 1 day

Course Description: Beneficial to plant personnel (operations, system design engineers, maintenance staff) involved in the operation of large fans, pumps and blowers with an interest in reducing the energy consumption of this equipment and optimizing production. Topics include: a review of turbo machine fundamentals and the reasons why inefficiencies occur - how to identify good targets for energy reduction - examination of energy reduction techniques suitable for fans, pumps and blowers.

Target Sector: Industrial

Specific Area: Mining

Audience: Operators

CENTRE FOR PROFESSIONAL ADVANCEMENT

PRACTICAL PUMP MAINTENANCE

Address: P.O. Box 1052, East Brunswick, NJ 08816

Phone: (908) 613-4535

Fax: (908) 238-9113

Course Duration: 3 days

Course Description: This course covers the fundamentals of pumps and techniques for effectively maintaining them. It is a practical presentation of how to install, align, troubleshoot, overhaul and repair pumps. Included are positive displacement, centrifugal and vertical pumps. Maintenance problems are introduced for group workshops and solutions.

Target Sector: Industrial, Commercial

Specific Area: Buildings

Audience: Technologists/Technicians, Maintenance Personnel, Operators

Fans, Pumps

CANADIAN INSTITUTE OF MINING, METALLURGY AND PETROLEUM

PRODUCTION OPTIMIZATION/ARTIFICIAL LIFT

Address:	3400 De Maisonneuve Boulevard West, Xerox Tower, Suite 1210, Montréal, PQ H3Z 3B8
Phone:	(514) 939-2710
Fax:	(514) 939-2714
Course Duration:	5 days
Course Description:	Participants will be able to select the most appropriate method of producing an oil or gas well. Concepts that will be examined will assist the student in specifying a course of action which will result in the most cost-effective production of a well with a view towards maximizing the production rates, while at the same time minimizing the operating costs. Topics: reservoir fluid flow - inflow performance relationships - flowing well performance and gas lift - pressure buildup surveys - rod pumping analysis and design - electrical submergible pumping - progressive cavity pumping.
Target Sector:	Industrial
Specific Area:	Petroleum Refining
Audience:	Engineers, Technologists/Technicians

Furnaces, Dryers, Kilns

CIET INC.

FURNACES, DRYERS AND KILNS

Address:	P.O. Box 385, Station A, 2000 Simcoe Street N, Oshawa, ON L1H 7L7
Phone:	(905) 721-3050
Fax:	(905) 721-3059
Toll-Free:	1-800-461-7618
Course Duration:	2 days
Course Description:	This CEMET course acquaints participants with the basic concepts of furnace, dryer and kiln operations, and the steps which can be taken to improve operating efficiency and the environmental impact of energy management measures. Topics: Keys to a Successful Energy Management Program - Introduction to Furnace, Dryer and Kiln Efficiency - Heat Transfer - Energy Balance - Furnace Performance - Operating Parameters - Description of Furnaces - Heat Recovery - Operation and Maintenance - Energy Management Opportunities - Environmental Impact of Energy Management - Financial Analysis.
Target Sector:	Commercial, Hospitality, Industrial, Institutional
Specific Area:	General
Audience:	Engineers, Managers, Maintenance Personnel

Heating, Ventilation, Air Conditioning

JOHNSON CONTROLS INSTITUTE

AIR-CONDITIONING CONTROLS-ELECTRONIC

Address: 507 East Michigan Street, Milwaukee, WI 53202

Phone: (414) 274-4286

Fax: (414) 274-4274

Course Duration: 5 days

Course Description: This course is especially designed for users and maintenance personnel of all types of air-conditioned buildings using electronic analog regulation, such as offices, banks, hospitals, schools, factories, public buildings and government installations. Also examined are fundamental heating, ventilation and air-conditioning concepts, with particular attention given to the application of regulation controls to CVAC systems.

Target Sector: Industrial, Commercial, Institutional

Specific Area: Buildings

Audience: Managers, Technologists/Technicians

ASHRAE

AIR SYSTEM DESIGN AND RETROFIT

Address: 1791 Tullie Circle North East, Atlanta, GA 30329

Phone: (404) 636-8400

Fax: (404) 321-5478

Course Duration: 2 days

Course Description: Practical treatment of air-system design taught by practicing industry leaders. Course covers fundamental concepts for air moving systems, then moves into a balanced presentation of new design and problem-solving retrofit, including practical examples and applications. Presents a step-by-step approach to the design of new systems to minimize fan energy use. Course also available in home study format.

Target Sector: Industrial, Commercial

Specific Area: Buildings

Audience: Engineers

Heating, Ventilation, Air Conditioning

ASHRAE

AUTOMATIC TEMPERATURE CONTROLS

Address:	1791 Tullie Circle North East, Atlanta, GA 30329
Phone:	(404) 636-8400
Fax:	(404) 321-5478
Course Duration:	2 days
Course Description:	Learn ways to improve system performance by proper design, application and selection of automatic temperature controls. This course covers application of fundamental control theory concepts and describes typical modern hardware for sensing and system control to lay the groundwork for understanding typical system applications. Practical examples are used. Topics: basic electrical principles - control devices, system interlocks - retrofitting approaches - chilled water piping systems - writing specifications - automatic temperature controls.
Target Sector:	Industrial, Commercial, Government
Specific Area:	Buildings
Audience:	Managers, Engineers, Operators

HONEYWELL (ONTARIO)

BUILDING AUTOMATION SYSTEM OPERATOR – HVAC

Address:	740 Ellesmere Road, ON15-03M, Scarborough, ON M1P 2V9
Phone:	(416) 293-8111
Fax:	(416) 297-4277
Course Duration:	2 days
Course Description:	This course is very similar to the Property Manager – HVAC except that there is more emphasis on equipment operation. Both of these courses can be tailored for the customer's site.
Target Sector:	Commercial
Specific Area:	Buildings
Audience:	Technologists/Technicians, Maintenance Personnel, Operators

Heating, Ventilation, Air Conditioning

CENTRA GAS

CUSTOMIZED TRAINING

Address: 200 Yorkland Boulevard, North York, ON M2J 5C6

Phone: (416) 496-5297

Fax: (416) 496-5301

Course Duration: varies

Course Description: Union Gas and Gaz Metropolitain will hold seminars for customers in the same industrial sector to explain more efficient or better use of a particular technology.

Target Sector: Industrial, Institutional, Commercial, Hospitality, Government

Specific Area: General

Audience: Managers, Engineers, Technologists/Technicians

ASHRAE

DDC FOR HVAC MONITORING & CONTROL

Address: 1791 Tullie Circle North East, Atlanta, GA 30329

Phone: (404) 636-8400

Fax: (404) 321-5478

Course Duration: 2 days

Course Description: Presents the fundamentals of digital computer communications, instrumentation, and digital controls to the HVAC engineer. Covers the design, specification and application of sensors, control devices and computer systems for HVAC monitoring and control. Topics: digital controls, sensors and actuators - controller operation - machine interfaces - installation - commissioning - operation and maintenance of DDC systems - data communication approaches.

Target Sector: Industrial, Commercial, Government

Specific Area: Buildings

Audience: Managers, Engineers, Operators

Heating, Ventilation, Air Conditioning

ASSOCIATION OF ENERGY ENGINEERS

GAS COOLING TECHNIQUES

Address: P.O. Box 1026, Lilburn, GA 30226

Phone: (404) 925-9633

Fax: (404) 381-9865

Course Duration: 2 days

Course Description: Course provides a clear understanding of the equipment costs, operating costs, and general equipment characteristics of gas cooling technologies, as compared with electric cooling systems. The full scope of currently available gas cooling technologies will be examined, from double-effect absorption systems and gas disiccant cooling, to engine-driven units and gas heat pumps. Included is an economic analysis to compare costs and determine whether gas cooling is right for a specific application and provide you with example cost calculation used for quantifying equipment paybacks. Topics: natural gas cooling, gas desiccant cooling, gas absorption cooling - gas rooftop systems - gas heat pumps.

Target Sector: Industrial, Commercial, Institutional, Government

Specific Area: Buildings

Audience: Managers, Engineers, Operators

CMA CHALIFOUR, MARCOTTE & ASSOCIÉS INC.

HEATING COURSE (HYDRO-QUÉBEC APPROVED)

Address: 755, boulevard St-Jean, Bureau 300, Pointe-Claire, PQ H9R 5M9

Phone: (514) 694-4141

Fax: (514) 694-1713

Course Duration: 49 hours

Course Description: Reference for all who work in the field of electric, gas or oil heating. Topics: new insulations - humidity and condensation - residential and swimming pool heat pumps - solar heat - oil burners - gas and high efficiency - bi-energy, costs, maintenance, etc.

Target Sector: Commercial, Institutional

Specific Area: Buildings

Audience: Managers, Operators, Maintenance Personnel

Heating, Ventilation, Air Conditioning

CIET INC.

HEATING, VENTILATING, AIR CONDITIONING

Address:	P.O. Box 385, Station A, 2000 Simcoe Street N, Oshawa, ON L1H 7L7
Phone:	(905) 721-3050
Fax:	(905) 721-3059
Toll-Free:	1-800-461-7618
Course Duration:	2 days
Course Description:	This CEMET course discusses the concepts of efficient HVAC system operation, fundamentals of heating and cooling load calculation, system operation and design and efficiency. Also includes a discussion on the environmental impact of energy management measures. Topics: Keys to a Successful Energy Management Program - Introduction to HVAC Systems - Fundamentals - Equipment Systems - Operation and Maintenance - Energy Management Opportunities - Environmental Impact of Energy Management - Financial Analysis.
Target Sector:	Commercial, Institutional, Hospitality, Industrial
Specific Area:	General
Audience:	Engineers, Maintenance Personnel, Managers

CMA CHALIFOUR, MARCOTTE & ASSOCIÉS INC.

HOT WATER HEATING SYSTEMS

Address:	755, boulevard St-Jean, Bureau 300, Pointe-Claire, PQ H9R 5M9
Phone:	(514) 694-4141
Fax:	(514) 694-1713
Course Duration:	1 day
Course Description:	Understanding the operating of hot water systems and the roles of various components. How to operate the regulating controls, problems and solutions. How to calibrate pneumatic thermostats.
Target Sector:	Industrial, Commercial, Institutional
Specific Area:	Buildings
Audience:	Managers, Technologists/Technicians, Maintenance Personnel

Heating, Ventilation, Air Conditioning

ASSOCIATION OF ENERGY ENGINEERS

HVAC

Address: P.O. Box 1026, Lilburn, GA 30226

Phone: (404) 925-9633

Fax: (404) 381-9865

Course Duration: 2 days

Course Description: Course provides the knowledge, procedures and techniques to understand, evaluate and balance the air/water sides of HVAC systems. Looks at ways to improve equipment performance, extend equipment life and conserve energy, while ensuring occupancy comfort. Case studies are used. Topics: balancing, instrumentation - system components - measurements - testing cooling towers - HVAC controls.

Target Sector: Industrial, Commercial, Institutional, Government

Specific Area: Buildings

Audience: Managers, Engineers, Operators

SIR SANDFORD FLEMING COLLEGE

HVAC CERTIFICATE PROGRAM

Address: Brealey Drive, Peterborough, ON K9J 7B1

Phone: (705) 876-1614

Fax: (705) 876-9423

Course Duration: Continuing Education

Course Description: This program is intended for persons interested in studying for a career in the air-conditioning and refrigeration field. The program consists of six modules - each module being 48 hours in duration and scheduled to run two evenings per week. A Fleming certificate will be issued upon successful completion of all six modules.
Topics include the following:
Module One – fundamentals of air-conditioning & refrigeration; air-conditioning & refrigeration cycle; basic systems; basic piping & welding practices; and basic electrical wiring.
Module Two – air-conditioning components; equipment & tools; electric motors; circuits; controls; and wiring diagrams.
Module Three – refrigerants and their properties; pressure enthalpy, psychometrics; and proper setting & adjustments of system components.
Module Four – heat-loss calculations; component selection; duct sizing; pipe sizing; and accessories.
Module Five – residential systems; installation; retrofitting; conversions; and high-efficiency technology.
Module Six – troubleshooting residential & commercial; and refrigeration & heating equipment.

Target Sector: Industrial, Commercial, Institutional

Specific Area: General

Audience: Other

Heating, Ventilation, Air Conditioning

TECHNICAL RESOURCES INSTITUTE

HVAC CONTROLS

Address: 25 Woods Lake Road, Suite 405, Greenville, SC 29607

Phone: (803) 271-4973

Fax: (803) 271-4973

Course Duration: 3 days

Course Description: The course is designed to provide a comprehensive look at contemporary HVAC control systems. It takes a practical approach to HVAC control applications. Theoretical models and the finer points of control algorithmic development are bypassed in favour of what works and what doesn't. Fundamentals and solutions to common problems are stressed instead of the more exotic applications. Topics: HVAC control systems - configuration and hardware - pneumatic, electric, electronic and digital systems - present-day control problems.

Target Sector: Industrial, Institutional, Commercial, Government, Retail

Specific Area: Buildings

Audience: Managers, Engineers, Technologists/Technicians

E SOURCE, INC.

HVAC DESIGN SEMINAR

Address: 103 Walnut Street, 2nd floor, Boulder, CO 80302

Phone: (303) 440-8500

Fax: (303) 440-8502

Course Duration: 6-8 hours

Course Description: Workshop highlights recent advances in technology and design practice that have the potential to dramatically improve the cost-effectiveness of DSM programs. The emphasis is on practical problems of reintroducing real engineering into HVAC system design, overcoming outdated "rules of thumb", and specifying and procuring efficient equipment. Strategies for cutting HVAC energy use.

Target Sector: Industrial, Commercial

Specific Area: Buildings

Audience: Engineers, Technologists/Technicians, Managers

Heating, Ventilation, Air Conditioning

JOHNSON CONTROLS INSTITUTE

HVAC SYSTEMS

Address: 507 East Michigan Street, Milwaukee, WI 53202

Phone: (414) 274-4286

Fax: (414) 274-4274

Course Duration: 1 week

Course Description: Air-conditioning mechanical systems, air-conditioning controls, maintenance supervisors, advanced air-conditioning controls, variable air volume control.

Target Sector: Industrial, Commercial

Specific Area: Buildings

Audience: Managers, Operators, Maintenance Personnel

MARLIN WESTWOOD TRAINING

INCREASING HEATING/COOLING EFFICIENCY

Address: 211 Watline Avenue, Mississauga, ON L4Z 1P3

Phone: (905) 890-1500

Fax: (905) 890-6550

Course Duration: 5 lessons

Course Description: This 10-hour unit explains the measurement of various environmental factors and their effect on human comfort. Introduces the concept of zones. Covers ventilation requirements and savings possible by reducing airflow. Examines energy waste versus conservation measures relating to furnaces, boilers, air-conditioning and refrigeration equipment. Topics: conditioning the air - managing airflow in HVAC systems - conserving energy in heating systems - reducing losses in distribution systems.

Target Sector: Industrial, Commercial

Specific Area: Buildings

Audience: Managers, Engineers, Architects

Heating, Ventilation, Air Conditioning

ASHRAE

INDOOR AIR QUALITY

Address: 1791 Tullie Circle North East, Atlanta, GA 30329

Phone: (404) 636-8400

Fax: (404) 321-5478

Course Duration: 2 days

Course Description: Determining causes of unacceptable interior air quality, its impact on the health and comfort of occupants and strategies to correct difficulties. Standard 62-1989R of ASHRAE will be presented. Analysis of design of CVAC systems for better air quality while keeping costs of energy and construction to a minimum.

Target Sector: Industrial, Institutional, Commercial

Specific Area: Buildings

Audience: Technologists/Technicians

BRITISH COLUMBIA ELECTRICAL ASSOCIATION

MECHANICAL SESSION

Address: 313 - 13988 Cambie Road, Richmond, BC V6V 2K4

Phone: (604) 279-9017

Fax: (604) 279-8850

Course Duration: 1 day

Course Description: Topics: ground-source heat pumps - super high-efficiency heat pumps - air-cooled heat pump/dual-fuel heat pump - glazing options - low-E - vision wall - DDC control systems - ADSs for fans and chillers - NCFC systems - small wall-hung boilers.

Target Sector: Commercial

Specific Area: Buildings

Audience: Engineers, Technologists/Technicians, Managers

Heating, Ventilation, Air Conditioning

TECHNICAL RESOURCES INSTITUTE

MECHANICAL SYSTEM INSPECTION

Address:	25 Woods Lake Road, Suite 405, Greenville, SC 29607
Phone:	(803) 271-4973
Fax:	(803) 271-4973
Course Duration:	2-4 days
Course Description:	Customized training on HVAC systems and related issues including HVAC control system, configuration and hardware, plumbing systems, mechanical systems, pneumatic, electric, electronic and digital systems, and present-day control problems.
Target Sector:	Industrial, Commercial, Institutional, Government, Retail
Specific Area:	Buildings
Audience:	Managers, Engineers, Operators

ASSOCIATION OF ENERGY ENGINEERS

OPTIMIZING PERFORMANCE-CHILLED WATER/AIR

Address:	P.O. Box 1026, Lilburn, GA 30226
Phone:	(404) 925-9633
Fax:	(404) 381-9865
Course Duration:	2 days
Course Description:	Provides the facts and procedures needed to design, operate and maintain energy-efficient chilled water and air distribution systems, resulting in optimum HVAC system performance. Participants learn how to select the most cost-effective chilled water system for a specific application. Fundamentals of air distribution systems will also be covered in detail, showing how to select the system best suited to meet ventilation requirements while minimizing energy use. Topics: types of equipment, system design - efficiency and energy considerations - air distribution systems - fan systems - indoor air quality.
Target Sector:	Industrial, Commercial, Institutional, Government
Specific Area:	Buildings
Audience:	Managers, Engineers, Operators

Heating, Ventilation, Air Conditioning

LANDIS & GYR POWERS LTÉE

PNEUMATIC CONTROLS FOR HVAC

Address:	6160, route Transcanadienne, Saint-Laurent, PQ H4T 1X9
Phone:	(514) 341-3045
Fax:	(514) 341-3658
Course Duration:	5 days
Course Description:	Learn how to select and apply the aspects of regulation and the systems in order to maximize efficiency and improve energy savings.
Target Sector:	Industrial, Commercial, Institutional
Specific Area:	Buildings
Audience:	Technologists/Technicians, Managers

HONEYWELL (ONTARIO)

PROPERTY MANAGER NEEDS TO KNOW - HVAC

Address:	740 Ellesmere Road ON15-03M, Scarborough, ON M1P 2V9
Phone:	(416) 293-8111
Fax:	(416) 297-4277
Course Duration:	2 days
Course Description:	Relationship between energy consumption and HVAC operations, as well as the management of this relationship. Topics: system components - effect of people load on their environment system - importance of maintenance on system efficiency - identification and evaluation of HVAC system components - factors which affect energy consumption and building comfort - application of energy conservation principles to HVAC systems.
Target Sector:	Commercial
Specific Area:	Buildings
Audience:	Technologists/Technicians, Managers, Maintenance Personnel

Heating, Ventilation, Air Conditioning

ASSOCIATION OF ENERGY ENGINEERS

REFRIGERATION CFC'S

Address: P.O. Box 1026, Lilburn, GA 30226

Phone: (404) 925-9633

Fax: (404) 381-9865

Course Duration: 2 days

Course Description: Looks at proven state-of-the-art techniques for CFC recovery and reuse, along with procedures for reducing CFC emissions. Also examines new refrigerants now available and what modifications to existing equipment are required to permit their use.

Target Sector: Industrial, Commercial, Institutional, Government

Specific Area: Buildings

Audience: Managers, Engineers, Operators

ASHRAE

REFRIGERATION SYSTEMS FOR INDUSTRY

Address: 1791 Tullie Circle North East, Atlanta, GA 30329

Phone: (404) 636-8400

Fax: (404) 321-5478

Course Duration: 2 days

Course Description: Learn the elements of a basic refrigeration cycle using the pressure enthalpy diagram to graphically illustrate the change in the condition of the refrigeration at various points in the cycle. The factors involved in proper and safe design of high and low vessels are discussed, as well as the purpose of intercoolers, receivers, and suction traps. Topics: refrigeration cost analysis - heat recovery - refrigerant feeding methods - vessels and piping - types of systems and system components.

Target Sector: Industrial, Commercial, Government

Specific Area: Buildings

Audience: Managers, Engineers, Operators

Heating, Ventilation, Air Conditioning

NEWFOUNDLAND POWER

SPACE & WATER HEATING - SMART CHOICES

Address: 55 Kenmount Road, P.O. Box 8910, St. John's, NF A1B 3P6

Phone: (709) 737-2925

Fax: (709) 737-2882

Course Duration: 6 hours

Course Description: Provides an overview of various electric space heating systems.

Target Sector: Commercial

Specific Area: Buildings

Audience: Operators, Maintenance Personnel, Other

ASHRAE

TESTING, ADJUSTING, BALANCING (CVAC)

Address: 1791 Tullie Circle North East, Atlanta, GA 30329

Phone: (404) 636-8400

Fax: (404) 321-5478

Course Duration: 2 days

Course Description: This seminar treats the fundamental parameters of design and operation for tests, adjustments and balancing of new and existing CVAC systems, in order to realize best performance in the full range of loads. Topics also covered are the selection and usage of components, preliminary office procedures, analysis of the system, methods of testing, adjusting and balancing.

Target Sector: Industrial, Commercial, Institutional

Specific Area: Buildings

Audience: Technologists/Technicians, Operators

Heating, Ventilation, Air Conditioning

CORPORATION DES MAÎTRES MÉCANICIENS EN TUYAUTERIE DU QUÉBEC

TUBE GAS HEATING

Address: 8175, boulevard St-Laurent, Montréal, PQ H2P 2M1

Phone: (514) 382-2668

Fax: (514) 382-1566

Course Duration: 7 hours

Course Description: Increasing the performance of a gas heating system with the use of this application for high places and where air currents are frequent.

Target Sector: Industrial, Institutional

Specific Area: Buildings

Audience:: Technologists/Technicians, Managers

ASSOCIATION OF ENERGY ENGINEERS

VAV SYSTEMS

Address: P.O. Box 1026, Lilburn, GA 30226

Phone: (404) 925-9633

Fax: (404) 381-9865

Course Duration: 1 day

Course Description: Course provides the facts and procedures needed to assure that variable air volume systems are operating efficiently and cost-effectively. The course assumes a basic working knowledge of testing, adjusting and balancing methods, and concentrates on in-depth exploration of how the various types of VAV systems operate. Topics: fan volume - static pressure control, system control - settings and adjustments - terminal devices - balancing VAV systems.

Target Sector: Industrial, Commercial, Institutional, Government

Specific Area: Buildings

Audience: Managers, Engineers, Operators

Heating, Ventilation, Air Conditioning

ASHRAE

WATER SYSTEM DESIGN

Address:	1791 Tullie Circle North East, Atlanta, GA 30329
Phone:	(404) 636-8400
Fax:	(404) 321-5478
Course Duration:	2 days
Course Description:	Learn how to design energy-efficient fluid systems. Focuses on energy-efficient design and retrofit for lowest life-cycle cost by employing more complex systems, variable flow systems and advanced operating techniques. Topics: fluid-flow fundamentals - expansion tanks - part load-performance design - variable volume piping - hydronic system design - centrifugal pumps - piping systems - thermal unit control - chiller performance.
Target Sector:	Industrial, Commercial, Government
Specific Area:	Buildings
Audience:	Managers, Engineers, Operators

Lighting Systems

E SOURCE, INC.

ADVANCED LIGHTING SEMINAR

Address:	103 Walnut Street, 2nd floor, Boulder, CO 80302
Phone:	(303) 440-8500
Fax:	(303) 440-8502
Course Duration:	6-8 hours
Course Description:	Seminar features the latest and best lighting technologies and ways to integrate them into whole system designs to ensure persistence and minimize life-cycle costs. Seminar identifies common mistakes in lighting installations and how to avoid them. Real-world case studies are presented. Lessons for DSM program design, implementation and incentive structures are identified.
Target Sector:	Industrial, Commercial
Specific Area:	Electrical/Electronics
Audience:	Managers, Technologists/Technicians, Maintenance Personnel

GE LIGHTING CANADA

CONSULTING ENGINEERS/LIGHTING DESIGNERS

Address:	2300 Meadowvale Boulevard Mississauga, ON L5N 5P9
Phone:	(905) 858-5405
Fax:	(905) 858-5441
Course Duration:	2.5 days
Course Description:	A comprehensive presentation of the latest lighting technology applied in both indoor and outdoor applications. Presentations include practical solutions to design problems involving lighting system selection lamp color, brightness control, accent lighting and energy management.
Target Sector:	Industrial, Commercial
Specific Area:	Electrical/Electronics
Audience:	Technologists/Technicians, Engineers

Lighting Systems

ASSOCIATION OF ENERGY ENGINEERS

EFFECTIVE LIGHTING RETROFIT SOLUTIONS

Address: P.O. Box 1026, Lilburn, GA 30226

Phone: (404) 925-9633

Fax: (404) 381-9865

Course Duration: 2 days

Course Description: Course provides detailed information to plan retrofit projects and to select and apply the most effective retrofit equipment. Topics: retrofit lamps - ballast efficiency improvements - system efficiency - energy management - environmental concerns.

Target Sector: Industrial, Commercial, Institutional, Government

Specific Area: Buildings

Audience: Managers, Engineers, Operators

BRITISH COLUMBIA ELECTRICAL ASSOCIATION

ELECTRICAL LIGHTING

Address: 313 - 13988 Cambie Road, Richmond, BC V6V 2K4

Phone: (604) 279-9017

Fax: (604) 279-8850

Course Duration: 1 day

Course Description: Areas covered are good quality lighting, DDC control systems, daylighting and occupancy sensors, electronic ballasts - IC vs. discrete and dimming, new lamp technology, exit sign technology, reflectors vs. "deep cell" technology, electrical safety branch inspection/permit requirements.

Target Sector: Commercial

Specific Area: Buildings

Audience: Engineers, Technologists/Technicians, Other

Lighting Systems

ASSOCIATION OF ENERGY ENGINEERS

FUNDAMENTALS OF LIGHTING EFFICIENCY

Address:	P.O. Box 1026, Lilburn, GA 30226
Phone:	(404) 925-9633
Fax:	(404) 381-9865
Course Duration:	2 days
Course Description:	Broad-based instruction on the basics of efficient lighting design, retrofit, and application. Lighting fundamentals, light sources, ballasts, lighting controls, demand-side management, effective retrofit solutions, maintaining lighting performance.
Target Sector:	Industrial, Commercial, Institutional, Government
Specific Area:	Buildings
Audience:	Managers, Engineers, Technologists/Technicians

GE LIGHTING CANADA

INDUSTRIAL LIGHTING

Address:	2300 Meadowvale Boulevard, Mississauga, ON L5N 5P9
Phone:	(905) 858-5405
Fax:	(905) 858-5441
Course Duration:	2.5 days
Course Description:	The conference covers light-source selection luminaire characteristics, economic analysis and lighting maintenance. Also includes design workshops, task supplementary lighting, safety and security lighting, lighting for office area associated with industrial operations, and lighting retrofit opportunities.
Target Sector:	Industrial
Specific Area:	Electrical/Electronics
Audience:	Managers, Maintenance Personnel

Lighting Systems

ILLUMINATING ENGINEERING SOCIETY NORTH AMERICA

INTRODUCTION TO LIGHT AND LIGHTING

Address: 120 Wall Street, fl. 17, New York, NY 10005

Phone: (212) 248-5000

Fax: (212) 248-5017

Course Duration: varies

Course Description: Provides the opportunity to learn principles of lighting through basic and easy-to-follow instruction. Available in both self-learning and classroom format. Topics: vision and comfort - visability factors - calculations - lighting economics - light control.

Target Sector: Industrial, Commercial, Institutional, Government

Specific Area: Buildings

Audience: Engineers, Technologists/Technicians, Maintenance Personnel

ILLUMINATING ENGINEERING SOCIETY NORTH AMERICA

LAMPS AND LUMINAIRES

Address: 120 Wall Street, fl. 17, New York, NY 10005

Phone: (212) 248-5000

Fax: (212) 248-5017

Course Duration: varies

Course Description: Set of 16 courses available in both self-learning and classroom format. Specific courses are Lighting Mathematics, Vision Colour, Light Sources, Ballasts, Optical Control, Illuminance Calculations, Calculating Luminence at a Point, Psychological Aspects of Lighting, Design Concepts, Computers in Lighting Design and Analysis, Lighting Economics, Daylighting Calculations, Electrical Quantities and Building Distribution and Electrical Controls.

Target Sector: Industrial, Commercial, Institutional, Government

Specific Area: Buildings

Audience: Engineers, Maintenance Personnel, Technologists/Technicians

Lighting Systems

GE LIGHTING CANADA

LIGHT PRO

Address: 2300 Meadowvale Boulevard, Mississauga, ON L5N 5P9

Phone: (905) 858-5405

Fax: (905) 858-5441

Course Duration: varies

Course Description: A self-learning package consisting of four modules: Incandescent lamps, fluorescent lamps, MID lamps and cost of light. The manuals are easy to use and provide up-to-date relevant information on the respective topics. Included is extensive use of diagrams, checklists and self-administered quizzes.

Target Sector: Commercial, Institutional, Government, Retail

Specific Area: Electrical/Electronics

Audience: Managers, Engineers, Operators

GE LIGHTING CANADA

LIGHTING AND DEMAND-SIDE MANAGEMENT

Address: 2300 Meadowvale Boulevard, Mississauga, ON L5N 5P9

Phone: (905) 858-5405

Fax: (905) 858-5441

Course Duration: 2.5 days

Course Description: Includes discussions of light sources, lighting systems, light and color, lighting audit/evaluation recommendation process together with commercial, industrial, and merchandising applications with workshop sessions. Also included are reviews of current demand-side management trends along with discussions of successful DSM programs.

Target Sector: Industrial, Commercial

Specific Area: Electrical/Electronics

Audience: Technologists/Technicians, Managers

Lighting Systems

PHILIPS LIGHTING

LIGHTING APPLICATION

Address: 601 Milner Avenue, Scarborough, ON M1B 1M8

Phone: (416) 292-3000

Fax: (416) 754-6265

Course Duration: 1 day

Course Description: Basic lamp and ballast technology, the colour of light, energy-saving practices, office and retail lighting, future trends and new developments. Designed to give a broad overview of lighting and the latest technology, and how to apply this technology in practice.

Target Sector: Industrial, Commercial, Retail

Specific Area: Electrical/Electronics

Audience: Technologists/Technicians, Managers, Maintenance Personnel

ONTARIO ELECTRICAL LEAGUE

LIGHTING BASICS PROGRAM

Address: 2 Lansing Square, Suite 1000, North York, ON M2J 4P8

Phone: (416) 495-0052

Fax: (416) 495-1804

Course Duration: 2 days

Course Description: Designed to give participants the ability to assist customers in selecting appropriate energy-efficient lighting products. Participants will be able to identify and recommend luminaire types and calculate energy savings while learning the importance of maintenance, colour rendition and the characteristics of major lamp categories.

Target Sector: Industrial, Commercial

Specific Area: Electrical/Electronics

Audience: Technologists/Technicians, Maintenance Personnel, Architects

Lighting Systems

LIGHTING CONCEPT CENTRE

LIGHTING BY DESIGN DESIGNERS FORUM

Address: 160 Pears Avenue, Toronto, ON M5R 1T2

Phone: (416) 969-1400

Fax: (416) 905-3450

Course Duration: 3 days

Course Description: Suited for those who design and specify lighting systems for store, institutional, commercial and hospitality projects. Selection of energy-efficient fixtures, light and colour, light source and system characteristics and energy efficiency characteristics are covered. Full-scale demonstration areas and mock-ups support the lighting experience.

Target Sector: Industrial, Institutional, Commercial, Hospitality, Government

Specific Area: General

Audience: Architects

ILLUMINATING ENGINEERING SOCIETY NORTH AMERICA

LIGHTING EDUCATION FUNDAMENTALS

Address: 120 Wall Street, fl. 17, New York, NY 10005

Phone: (212) 248-5000

Fax: (212) 248-5017

Course Duration: varies

Course Description: Series of 10 courses available in both self-learning and classroom format. These include Light and Colour; Light, Vision, and Perception; Light Sources, Luminaires and their Photometric Data; Lighting Calculations; Lighting Applications for Visual Performance; Lighting for Visual Impact; Exterior Lighting; Energy Management/Lighting Economics; and Daylighting. Also available are introduction to lighting slide sets and videos.

Target Sector: Industrial, Commercial, Institutional, Government

Specific Area: Buildings

Audience: Engineers, Technologists/Technicians, Maintenance Personnel

Lighting Systems

ILLUMINATING ENGINEERING SOCIETY NORTH AMERICA

LIGHTING EFFICIENCY TRAINING

Address: 120 Wall Street, fl. 17, New York, NY 10005

Phone: (212) 248-5000

Fax: (212) 248-5017

Course Duration: 1 day

Course Description: Energy overview and potential savings, quality vs. efficiency, energy-cost equations, environmental benefits. Lighting concepts and vocabulary. Advanced components and information on new lamps, ballasts, fixtures, and controls. Maintenance, spot relamping, group relamping, cleaning fixtures and lamps, cleaning room surfaces, light loss factors, ROI, cost analysis.

Target Sector: Industrial, Commercial

Specific Area: Electrical/Electronics

Audience: Technologists/Technicians, Operators, Maintenance Personnel

LIGHTING CONCEPT CENTRE

LIGHTING ENERGY MANAGEMENT CONFERENCE

Address: 160 Pears Avenue, Toronto, ON M5R 1T2

Phone: (416) 969-1400

Fax: (416) 905-3450

Course Duration: 1 day

Course Description: Program is directed to the decision makers responsible for energy efficiency, productivity, and maintenance. Participants receive up-to-date information on all aspects of lighting including light sources and systems, economics, light and colour, retrofit and relighting opportunities. Discussions and workshops take place within unique full-scale demonstration areas designed to let the participant experience efficient and productive lighting application.

Target Sector: Industrial, Institutional, Commercial, Hospitality, Retail

Specific Area: General

Audience: Managers, Engineers, Maintenance Personnel

Lighting Systems

LIGHTING CONCEPT CENTRE

LIGHTING SYMPOSIUM/ENERGY CONTRACTORS

Address: 160 Pears Avenue, Toronto, ON M5R 1T2

Phone: (416) 969-1400

Fax: (416) 905-3450

Course Duration: 3 days

Course Description: A symposium structured specifically toward those who design and specify lighting systems. Full-scale lighting demonstrations within the lighting centre are used to demonstrate various lighting system alternatives. Hands-on workshops using sophisticated computer-sided lighting design techniques are also included.

Target Sector: Industrial, Institutional, Commercial Hospitality, Government

Specific Area: General

Audience: Consultants, Engineers, Technologists/Technicians

GE LIGHTING CANADA

LIGHTING - COMMERCIAL/INDUSTRIAL

Address: 2300 Meadowvale Boulevard, Mississauga, ON L5N 5P9

Phone: (905) 858-5405

Fax: (905) 858-5441

Course Duration: 4.5 days

Course Description: Includes store, office, industrial and outdoor lighting design, as well as the basics of lighting terminology, light sources, systems, light and color, lighting design calculations, luminaire design and photometry. Strong emphasis on design workshops and interaction with GE product and application specialists.

Target Sector: Industrial, Commercial

Specific Area: Electrical/Electronics

Audience: Technologists/Technicians, Operators, Maintenance Personnel

Lighting Systems

GE LIGHTING CANADA

LIGHTING - MUSEUM AND DISPLAY

Address: 2300 Meadowvale Boulevard, Mississauga, ON L5N 5P9

Phone: (905) 858-5405

Fax: (905) 858-5441

Course Duration: 2 days

Course Description: Guide to effective accent and display lighting techniques with particular focus on the challenges of museum applications. Utilizing lectures and workshops, the conference includes a review of the latest developments in light sources and luminaires, and provides lighting system selection criteria and design guidelines. Special topics include display case lighting options; lighting and fading; lighting design for the museum gift shop, lobbies and residential art displays.

Target Sector: Commercial

Specific Area: Electrical/Electronics

Audience: Managers, Maintenance Personnel, Technologists/Technicians

GE LIGHTING CANADA

LIGHTING - OFFICE/PUBLIC BUILDINGS

Address: 2300 Meadowvale Boulevard, Mississauga, ON L5N 5P9

Phone: (905) 858-5405

Fax: (905) 858-5441

Course Duration: 2.5 days

Course Description: A comprehensive look at the new lighting tools and techniques that can produce more effective, energy-efficient, and economic lighting for productive human working environments. Included are presentations on light sources, lighting equipment, light and colour, design and maintenance oriented to office applications.

Target Sector: Commercial

Specific Area: Electrical/Electronics

Audience: Technologists/Technicians, Engineers

Lighting Systems

GE LIGHTING CANADA

MODERN STORE LIGHTING

Address: 2300 Meadowvale Boulevard, Mississauga, ON L5N 5P9

Phone: (905) 858-5405

Fax: (905) 858-5441

Course Duration: 2.5 days

Course Description: Presentations, full-scale merchandising settings and interactive workshop sessions are used to demonstrate effective, imaginative and energy-efficient lighting solutions for a broad range of lighting challenges. Includes sessions on light sources, lighting equipment, light and color, design and maintenance.

Target Sector: Commercial, Retail

Specific Area: Electrical/Electronics

Audience: Managers, Operators, Maintenance Personnel

SIRICON

NATURAL, ARTIFICIAL & PASSIVE LIGHTING

Address: 1455, boulevard de Maisonneuve Ouest, Montréal, PQ H3G 1M8

Phone: (514) 848-8770

Fax: (514) 848-3198

Course Duration: 14 hours

Course Description: Qualitative aspects of the "design" of lighting. Study of natural and artificial lighting systems. Hydro-Québec lighting efficiency program. Solar heating systems and design.

Target Sector: Industrial, Commercial

Specific Area: Buildings

Audience: Engineers, Managers, Technologists/Technicians

Lighting Systems

GE LIGHTING CANADA

OUTDOOR LIGHTING DESIGN

Address: 2300 Meadowvale Boulevard, Mississauga, ON L5N 5P9

Phone: (905) 858-5405

Fax: (905) 858-5441

Course Duration: 2.5 days

Course Description: Application-oriented presentations and demonstrations involving building floodlighting, landscape, walkway, parking area. Identification safety and security lighting. Special emphasis directed toward the proper selection of lighting systems, their costs, and their maintenance characteristics. Includes hands-on workshops.

Target Sector: Commercial

Specific Area: Electrical/Electronics

Audience: Technologists/Technicians, Managers

ILLUMINATING ENGINEERING SOCIETY NORTH AMERICA

ROADWAY LIGHTING FUNDAMENTALS

Address: 120 Wall Street, fl. 17, New York, NY 10005

Phone: (212) 248-5000

Fax: (212) 248-5017

Course Duration: varies

Course Description: Principles of roadway lighting resulting in accurate, comfortable vision and effective energy management. Available in home study and instructor led formats. Topics: light and sight - roadway lighting - light control - photometry - light sources - energy supply and control - maintenance - cost analysis.

Target Sector: Industrial, Commercial, Retail

Specific Area: Transportation

Audience: Engineers, Technologists/Technicians, Maintenance Personnel

Mechanical Systems

MARLIN WESTWOOD TRAINING

CONSERVING ENERGY IN MECHANICAL SYSTEMS

Address: 211 Watline Avenue, Mississauga, ON L4Z 1P3

Phone: (905) 890-1500

Fax: (905) 890-6550

Course Duration: 5 lessons

Course Description: This 10-hour unit stresses the causes and effects of friction and the importance of lubrication. Includes a discussion of efficient operation of materials handling systems, elevators, and escalators. Examines ways to conserve energy by reducing vibration. Explains the importance of good maintenance of pumps, blowers and compressors.

Target Sector: Industrial, Commercial

Specific Area: Buildings

Audience: Managers, Engineers, Architects

UNIVERSITÉ CONCORDIA

MECHANICAL SYSTEMS IN BUILDINGS

Address: 1455, boulevard de Maisonneuve Ouest, Études sur le bâtiment, Montréal, PQ H3G 1M8

Phone: (514) 848-3200

Fax: (514) 848-7965

Course Duration: 45 hours

Course Description: Analysis, selection and operation of CVAC systems; design of air and water distribution systems; evacuation of used water and jet systems.

Target Sector: Industrial, Commercial

Specific Area: Buildings

Audience: Architects, Engineers, Managers

Planning & Managing

POWER SMART INC.

DSM PROGRAM EVALUATION OVERVIEW

Address:	475 West Georgia, Suite 520, Vancouver, BC V6B 4M9
Phone:	(604) 688-4637
Fax:	(604) 688-7342
Course Duration:	4 hours
Course Description:	Introduction to the costs and benefits of effective monitoring and evaluation activities. The experience of other Canadian and U.S. utilities is compared with respect to the methodology, impact assessment, program performance and costs. The design for effective programs to meet regulatory requirements is discussed based on the particular service area of the participants.
Target Sector:	Industrial, Commercial
Specific Area:	General
Audience:	Managers

POWER SMART INC.

DSM PROGRAM PLANNING WORKSHOP I

Address:	475 West Georgia, Suite 520, Vancouver, BC V6B 4M9
Phone:	(604) 688-4637
Fax:	(604) 688-7342
Course Duration:	6 hours
Course Description:	Introduction to the rationale and techniques for DSM for utilities and regulators. Relationship of customer service to DSM and revenue requirements. Process of target setting, program design, implementation and evaluation. Program components, criteria, characteristics and costs are discussed based on target sectors and program type.
Target Sector:	Industrial, Commercial
Specific Area:	General
Audience:	Managers

Planning & Managing

POWER SMART INC.

DSM PROGRAM PLANNING WORKSHOP II

Address:	475 West Georgia, Suite 520, Vancouver, BC V6B 4M9
Phone:	(604) 688-4637
Fax:	(604) 688-7342
Course Duration:	5 hours
Course Description:	DSM development process from the level I workshop, examination of the quantitative aspects of targets, program types, and components. Based on utility-specific supply. Demand curves and costs of energy and demand, target selection program design and implementation strategies are developed.
Target Sector:	Industrial, Commercial
Specific Area:	General
Audience:	Managers

B.C. HYDRO

ENERGY MANAGER'S TRAINING

Address:	6911 Southpoint Drive, 13th floor, Burnaby, BC V3N 4X8
Phone:	(604) 528-2750
Fax:	(604) 528-7781
Course Duration:	1 day
Course Description:	Optimizing operational efficiency. Overview of strategic energy management planning. Case studies and analysis of savings opportunities specific to types of operation. Hands-on development of an energy plan.
Target Sector:	Industrial, Commercial
Specific Area:	General
Audience:	Managers, Technologists/Technicians, Maintenance Personnel

Planning & Managing

ONTARIO ELECTRICAL LEAGUE

ENERGY SAVINGS SPECIALIST

Address:	2 Lansing Square, Suite 1000, North York, ON M2J 4P8
Phone:	(416) 495-0052
Fax:	(416) 495-1804
Course Duration:	2 days
Course Description:	Designed to give participants the ability to produce energy savings proposals and provide energy management services to their customers. Participants will be able to identify opportunities, calculate potential energy and financial savings and the simple payback period.
Target Sector:	Industrial, Commercial
Specific Area:	General
Audience:	Technologists/Technicians, Architects, Other

BRITISH COLUMBIA ELECTRICAL ASSOCIATION

ENERGY SAVINGS THROUGH POWER EFFICIENCY

Address:	313 - 13988 Cambie Road, Richmond, BC V6V 2K4
Phone:	(604) 279-9017
Fax:	(604) 279-8850
Course Duration:	1 day
Course Description:	Achieving quality energy savings through power efficiency. Topics: AC motor starting - power network harmonics - power quality - power factor capacitors - BC Hydro Industrial Power Smart opportunities.
Target Sector:	Commercial
Specific Area:	Electrical/Electronics
Audience:	Engineers, Technologists/Technicians

Planning & Managing

ORDRE DES TECHNOLOGUES PROFESSIONNELS DU QUÉBEC

MAINTENANCE KNOWLEDGE

Address:	1265, rue Berri, Bureau 720, Montréal, PQ H2L 4X4
Phone:	(514) 845-3247
Fax:	(514) 845-3643
Course Duration:	6 days
Course Description:	How to set up a system of knowledgeable maintenance management and be capable of using it.
Target Sector:	Industrial
Specific Area:	Buildings
Audience:	Managers, Technologists/Technicians, Maintenance Personnel

ORDRE DES TECHNOLOGUES PROFESSIONNELS DU QUÉBEC

MAINTENANCE MANAGEMENT

Address:	1265, rue Berri, Bureau 720, Montréal, PQ H2L 4X4
Phone:	(514) 845-3247
Fax:	(514) 845-3643
Course Duration:	6 days
Course Description:	To master the techniques and tools of management of maintenance operations of an industrial system in order to increase profit.
Target Sector:	Industrial
Specific Area:	Buildings
Audience:	Managers

Planning & Managing

ORDRE DES TECHNOLOGUES PROFESSIONNELS DU QUÉBEC

MAINTENANCE PROBLEM SOLVING

Address: 1265, rue Berri, Bureau 720, Montréal, PQ H2L 4X4

Phone: (514) 845-3247

Fax: (514) 845-3643

Course Duration: 1 day

Course Description: To make maintenance more effective by use of a strategy and structured work methods for solving problems.

Target Sector: Industrial, Institutional

Specific Area: Buildings

Audience: Technologists/Technicians, Managers

ASSOCIATION OF DEMAND-SIDE MANAGEMENT PROFESSIONALS

ON TRACK: DSM PROGRAM EVALUATION

Address: 7040 W. Palmetto Park Road Suite 2315, Boca Raton, FL 33433

Phone: (407) 361-0023

Fax: (407) 361-0027

Course Duration: 2 days

Course Description: Explains the role of DSM evaluation; discusses impact, process and market evaluation; and identifies practical tactics for producing defensible evaluation results. Advanced evaluation methods, as well as more standard techniques are presented and discussed.

Target Sector: Industrial, Commercial

Specific Area: General

Audience: Managers, Technologists/Technicians, Engineers

Planning & Managing

ORDRE DES TECHNOLOGUES PROFESSIONNELS DU QUÉBEC

PREVENTIVE MAINTENANCE

Address:	1265, rue Berri, Bureau 720, Montréal, PQ H2L 4X4
Phone:	(514) 845-3247
Fax:	(514) 845-3643
Course Duration:	3 days
Course Description:	Explains the necessity of a program structured towards preventive maintenance. The stages and constraints for such a program and the benefits of the use of maintenance skills.
Target Sector:	Industrial
Specific Area:	Buildings
Audience:	Technologists/Technicians, Maintenance Personnel, Managers

SIRICON

PROPERTY PRESERVATION

Address:	1455, boulevard de Maisonneuve Ouest, Montréal, PQ H3G 1M8
Phone:	(514) 848-8770
Fax:	(514) 848-3198
Course Duration:	1 day
Course Description:	Maintenance of building systems, management of a preventive maintenance program.
Target Sector:	Industrial, Commercial, Institutional
Specific Area:	Buildings
Audience:	Engineers, Architects, Managers

Planning & Managing

E SOURCE, INC.

REINVENTING DSM

Address:	103 Walnut Street, 2nd floor, Boulder, CO 80302
Phone:	(303) 440-8500
Fax:	(303) 440-8502
Course Duration:	6-8 hours
Course Description:	Retail competition will have implications for the way in which energy efficiency services are delivered. If utilities hope to retain market share and achieve better-than-commodity market rates of return, they will have to develop highly differentiated energy-services packages, including power quality management; innovative pricing, billing and financial risk management; and customer-oriented efficiency services.
Target Sector:	Industrial, Commercial
Specific Area:	Buildings
Audience:	Managers, Technologists/Technicians, Maintenance Personnel

Steam & Condensate Systems

SPIRAX SARCO

CUSTOMIZED TRAINING

Address:	383 Applewood Crescent, Concord, ON L4K 4J3
Phone:	(905) 660-5510
Fax:	(905) 660-5503
Course Duration:	varies
Course Description:	This supplier of steam-control equipment, primarily for the heating industry, holds seminars to assist customers and prospective customers on saving fuel and improving quality production. Some seminars are held in conjunction with the University of Toronto.
Target Sector:	Industrial
Specific Area:	General
Audience:	Managers, Technologists/Technicians, Engineers

CIET INC.

STEAM AND CONDENSATE SYSTEMS

Address:	P.O. Box 385, Station A, 2000 Simcoe Street N, Oshawa, ON L1H 7L7
Phone:	(905) 721-3050
Fax:	(905) 721-3059
Toll-Free:	1-800-461-7618
Course Duration:	2 days
Course Description:	This CEMET course acquaints the participant with the concepts of energy-efficient steam distribution and condensate return. Topics: Keys to a Successful Energy Management Program - Introduction to Steam and Condensate Systems - Steam and Condensate Cycle - Piping Systems - Condensate Removal - Energy Loss Areas - Equipment - Flash Steam - Energy Management Opportunities - Environmental Impact of Energy Management Projects - Financial Analysis.
Target Sector:	Commercial, Hospitality, Industrial, Institutional
Specific Area:	General
Audience:	Engineers, Maintenance Personnel, Managers

Steam & Condensate Systems

CENTRA GAS

STEAM DISTRIBUTION SYSTEMS

Address:	200 Yorkland Boulevard, North York, ON M2J 5C6
Phone:	(416) 496-5297
Fax:	(416) 496-5301
Course Duration:	2 days
Course Description:	Co-sponsored with Spirax Technology, Belleville, Ontario (contact Shaukat Sangar 905-660-5510).
Target Sector:	Industrial, Institutional, Commercial, Hospitality, Government
Specific Area:	General
Audience:	Managers, Technologists/Technicians, Maintenance Personnel

Technical Information

ENVIRONMENTAL SERVICES ASSOCIATION OF ALBERTA

TECHNOLOGY FOR REMEDIATION OF CONTAMINATED SOIL

Address:	#250, 10508 - 82nd Street, Edmonton, AB T6E 2A4
Phone:	(403) 439-6363
Fax:	(403) 439-4249
Course Duration:	2 days
Course Description:	Outlines remediation options which are available for contaminated soils and ground water, assessing remediation options for specific contaminants and choosing the most effective methods. Treatment of contaminated soil and contaminated ground water applied to facilities and programs.
Target Sector:	Industrial, Commercial, Institutional, Government
Specific Area:	General
Audience:	Engineers, Technologists/Technicians, Consultants

Thermodynamics (Energy Basics)

ÉCOLE POLYTECHNIQUE

ENERGY CONSERVATION

Address: Institut de génie énergétique, CP 6079, Succursale A, Montréal, PQ H3C 3A7

Phone: (514) 340-4803

Fax: (514) 340-4192

Course Duration: 45 hours

Course Description: Energy resources. Classification of energy conservation techniques. Limitations in energy conversion. Plant limitations. Thermodynamic limitations. Electromagnetism applied to energy conversion. Energy yield from magnetohydrodynamic transformers from Faraday and Hall type generators, thermoelectric transformers and photovoltaic batteries. Nuclear fusion. Comparative study of the different conversion techniques.

Target Sector: Industrial

Specific Area: General

Audience: Engineers

CONSULGAZ

ENERGY CONSERVATION TECHNIQUE

Address: 1717, rue Du Havre, Montréal, PQ H2K 2X3

Phone: (514) 598-3305

Fax: (514) 598-3799

Course Duration: 1 day

Course Description: To assist personnel to become familiar with the different possibilities to save energy. Basic theory of combustion and control. Types of profits and savings. Natural gas and security.

Target Sector: Industrial, Commercial

Specific Area: Buildings

Audience: Maintenance Personnel, Managers, Technologists/Technicians

Thermodynamics (Energy Basics)

ÉCOLE POLYTECHNIQUE

ENERGY OF INDUSTRIAL PROCESSES

Address: Institut de génie énergétique, C.P. 6079, Succursale A, Montréal, PQ H3C 3A7

Phone: (514) 340-4803

Fax: (514) 340-4192

Course Duration: 15 weeks

Course Description: Revision of fundamental ideas of thermodynamics; the unilaterality of energy balance sheets; the production of entropy and the concept of energy; physical and chemical energy of open systems and closed systems; exergetic balance; tool for identifying the principal sources of energy degradation; exergetic analysis of thermodynamic and thermomechanical processes.

Target Sector: Industrial

Specific Area: General

Audience: Engineers

SIRICON

THERMAL/HYGROMETRIC ANALYSIS OF BUILDINGS

Address: 1455, boulevard de Maisonneuve Ouest, Montréal, PQ H3G 1M8

Phone: (514) 848-8770

Fax: (514) 848-3198

Course Duration: 14 hours

Course Description: Analysis of heating charges. Heat transfer by conduction, radiation, convection. Analysis of heating, air-conditioning costs according to building shape, construction, solar heat, air infiltration, the effect of the occupants and daily variation. Case studies.

Target Sector: Industrial, Commercial

Specific Area: General

Audience: Engineers, Architects, Managers

Valves

HONEYWELL (ONTARIO)

PNEUMATIC CONTROLS-STATS,VALVES

Address:	740 Ellesmere Road, ON15-03M, Scarborough, ON M1P 2V9
Phone:	(416) 293-8111
Fax:	(416) 297-4277
Course Duration:	2 days
Course Description:	Similar to Effective Pneumatic Controls but focusing on stats, valves and dampers.
Target Sector:	Commercial
Specific Area:	Buildings
Audience:	Technologists/Technicians, Operators, Maintenance Personnel

Waste Heat Recovery

MARLIN WESTWOOD TRAINING

REDUCING ENERGY LOSSES IN BUILDINGS

Address: 211 Watline Avenue, Mississauga, ON L4Z 1P3

Phone: (905) 890-1500

Fax: (905) 890-6550

Course Duration: 5 lessons

Course Description: This 10-hour course explains the physical laws of heat transfer and how they apply to building heat losses. Discusses effects of sun, wind, and shade on energy consumption in buildings. Examines characteristics of different types of walls, roofs, windows and flooring. Demonstrates how different forms of insulation can improve thermal resistance. Gives sample applications of energy conservation measures, illustrating how to determine cost and payback period.

Target Sector: Industrial, Commercial

Specific Area: Buildings

Audience: Managers, Engineers, Architects

HEATING, REFRIGERATING & AIR CONDITIONING INSTITUTE

SMALL COMMERCIAL HEAT GAIN/HEAT LOSS

Address: 5045 Orbiter Drive, Building 11, Suite 300, Mississauga, ON L4W 4Y4

Phone: (905) 602-4700

Fax: (905) 602-1197

Course Duration: 3 days

Course Description: This course instructs on proper calculations of small commercial heat gains and heat losses and applies to buildings of less than 6000 sq.ft. Topics: ventilation requirements - factors which affect heat gain and loss - materials and insulation, time of day - exterior and interior conditions - heat transmission through structural components - design occupancy and heat gain from interior sources - calculation of summer and winter design loads.

Target Sector: Commercial

Specific Area: General

Audience: Engineers, Technologists/Technicians, Operators

Water

BUILDING OWNERS MANAGEMENT INSTITUTE (BOMI)

AIR HANDLING,WATER TREATMENT,PLUMBING

Address: 885 Don Mills Road, Suite 106, Don Mills, ON M3C 1V9

Phone: (416) 443-8790

Fax: (416) 443-9970

Course Duration: 4 months

Course Description: Course explains the fundamentals of human comfort and the components of HVAC systems. Air cleaning devices and indoor air quality concerns are also addressed. Water conditioning and treatment, along with plumbing systems, are discussed in light of present and emerging technology. Fire protection and alarm systems complete the diverse systems reviewed. Also available in self-study.

Target Sector: Commercial, Hospitality, Government, Retail

Specific Area: Buildings

Audience: Managers, Technologists/Technicians, Engineers

ASHRAE

WATER SYSTEM DESIGN

Address: 1791 Tullie Circle North East, Atlanta, GA 30329

Phone: (404) 636-8400

Fax: (404) 321-5478

Course Duration: 2 days

Course Description: Seminar covers advanced fluid system design, starting with a brief overview of fluid-flow fundamentals, pipe sizing, and pump selection. Focus is on efficient design and retrofit for lowest life-cycle cost by employing more complex systems, variable flow systems, and advanced operating techniques.

Target Sector: Industrial, Commercial

Specific Area: Buildings

Audience: Managers, Maintenance Personnel, Engineers

Index

Company name	page
Aggregate Producers' Association of Ontario	56
ASHRAE	26, 30, 31, 54, 78, 79, 80, 86, 89, 90, 92, 120
Association of Demand-Side Management Professionals	110
Association of Energy Engineers	6, 7, 30, 32, 33, 44, 46, 47, 48, 50, 69, 70, 71, 74, 81, 83, 87, 89, 91,94, 95
B.C. Hydro	107
Boiler Efficiency Institute	4, 6
Bouthillette, Parizeau & Associés Inc.	37
British Columbia Electrical Association	86, 94, 108
Building Owners Management Institute (BOMI)	3, 24, 25, 29, 32, 33, 37, 45, 64,68, 120
Bureau d'études Zariffa Inc.	55
Cambrian College	10
Canadian Institute of Mining, Metallurgy and Petroleum	55, 75, 76
Centennial College	61
Centra Gas	3, 35, 80, 114
Centre for Professional Advancement	75
CIET Inc.	4, 49, 50, 77, 82, 113
CMA Chalifour, Marcotte & Associés Inc.	8, 41, 72, 81, 82
College de Saint-Hyacinthe	28
Consulgaz	34, 116
Corporation des Maîtres Mécaniciens en Tuyauterie du Québec	91
CSTEC	52
Demand-Side Management Training Institute	60
Durham College	12
E Source, Inc.	43, 84, 93, 112
École de Technologie Supérieure	71
École Polytechnique	31, 70, 116, 117
Energy Training Ontario	27
Environmental Design Company	58
Environmental Services Association of Alberta	51, 52, 115
Fanshawe College	11, 25, 51
GE Lighting Canada	93, 95, 97, 101, 102, 103, 104

Georgian College 15
Government Services Canada 38, 68
Granton Institute of Technology 61
Heating, Refrigerating & Air Conditioning Institute 119
Honeywell (Ontario) 5, 36, 38, 39, 41, 42, 79, 88, 118
Humber College 40
Hydro-Québec 5
Illuminating Engineering Society North America 96, 99, 100, 104
Janus Technology 35
Johnson Controls Institute 39, 40, 78, 85
Landis & Gyr Powers Ltée 9, 36, 88
Lighting Concept Centre 99, 100, 101
Maritime Electric Company 72
Marlin Westwood Training 45, 67, 85, 105, 119
Maunder Britnell Inc. 58
Mohawk College 16, 21
Municipal Electrical Association 46
Natural Resources Canada 63
Newfoundland Power 53, 73, 90
Niagara College 17, 73
Northern College 18
Ontario Electrical League 66, 98, 108
Ordre des Technologues Professionnels du Québec 109, 110, 111
Petroleum Society of Canadian Mining Institute 69
Philips Lighting 98
Power Smart Inc. 57, 106, 107
Ryerson Polytechnic University 29
SAIT (Southern Alberta Institute of Technology) 27
Sandwell Inc. 48
Saskatchewan Energy Conservation/Development 64
Sault College 65
Scanada Consultants Limited 23
Seneca College 9, 13, 21, 56
Sir Sandford Fleming College 19, 83

SIRICON 103, 111, 117
Solomon Associates 59
Spirax Sarco 113
St. Clair College 20, 53, 62, 65
St. Lawrence College 14, 26, 62
Target Communications 24
Technical Resources Institute 84, 87
Technical University of Nova Scotia 66
TESCOR 8, 22, 28
Transalta Utilities Corporation 59
Université Concordia 22, 105
Université de Sherbrooke 2
Université du Québec à Chicoutimi 47
University College of the Cariboo 2
University of Ottawa 60
University of Regina 67
University of Toronto 49, 63